Elements & Notation of Music

By

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Boston, U.S.A.

Ginn & Company, Publishers

1902

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Preface

In a graded course of instruction in music practical skill should be supplemented by a corresponding amount of theoretical knowledge in order that the full educational value of the art may be realized.

That portion of the theory of music contained in this volume relates almost exclusively to the elements and notation of vocal music. Its compilation was prompted by the apparent need of uniformity among teachers and pupils in defining, describing, and explaining the common elementary effects, terms, and characters occurring in school music.

While Grove's "Dictionary of Music and Musicians" has been the standard followed by the author, many other reliable works have also been consulted, a partial list of which is given at the end of the book.

The general plan of "Elements and Notation of Music" is similar to that of "Rudiments of Music," by W. H. Cummings, London.

To that writer belongs the credit for the idea herein developed, that notes represent duration only, *i. e.*, time, while pitch is represented by the lines and spaces of the staff.

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Elements and Notation of Music

ERRATA

PAGE 6. Sec. 33, seventh line: for 318–322 read 324–325.

PAGE 14. Last line: for 291 read 293.

PAGE 97. Sec. 351, second line should read: (*b*) the chord of the supertonic is *diminished.*

and quality.

8. **Pitch** is the relative acuteness or gravity of a sound, and is dependent upon the rapidity of the vibrations by which the sound is produced.

The more rapid the vibrations, the higher the sound.

The slower the vibrations, the lower the sound.

9. **Force** or intensity of sound depends primarily upon the extension of the vibrations.

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Elements and Notation of Music

Introduction

1. **Sound** is the sensation produced through the organs of hearing.

2. **Sound** is caused by the vibrations of an object called a *sounding body*.

3. The word **tone** is often used instead of "*sound*."

4. The *media* of vibrations may be the air, or other gas, a liquid, or an elastic body.

5. A **musical sound** is produced when the vibrations are continued and regular.

6. A **noise** results when there is but a single impulse, as an electric spark, or a series of irregular impulses or vibrations.

7. Sound has *three essential* characteristics: **pitch**, **force**, and **quality**.

8. **Pitch** is the relative acuteness or gravity of a sound, and is dependent upon the rapidity of the vibrations by which the sound is produced.

The more rapid the vibrations, the higher the sound.

The slower the vibrations, the lower the sound.

9. **Force** or intensity of sound depends primarily upon the extension of the vibrations.

(a) Sounds may be *loud* or *soft.*

Larger and more extended vibrations produce louder sounds.

10. The **quality** or timbre of a sound depends upon the number and relative intensity of its harmonics* or overtones.† It is that property which distinguishes a certain sound played upon two or more different instruments, as a horn and a violin.

11. Besides the three elements of pitch, force, and quality, a musical sound has a fourth: **length,** or duration.

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* **Harmonics**: Secondary sounds produced by the vibrations of aliquot parts of a sounding body.

† This explanation by Helmholtz regarding *quality* cannot be held to be conclusive because of the theory of undertones advocated by other scientists.

Chapter I

PITCH OF SOUNDS

12. **Music** is the effect produced by the combination of sounds in rhythmic, melodic, and harmonic order.

Less specifically, it is the effect produced by the union of pitch and duration.

13. The pitch of musical sounds is represented by horizontal **lines** and **spaces**.

14. The duration of musical sounds is represented by the shapes of characters called **notes** (sec. 69).

15. The lines and spaces by which musical sounds are represented to the eye are like a ladder, the lowest line being considered the first. The higher the step on the ladder, the higher will be the pitch.

THE STAFF

16. Five horizontal lines and four equal spaces are called the **staff**.

17. The lines and spaces of the staff are named from the lowest upwards.

18. Two five-lined staffs placed one above the other, with an extra line between, making a large staff of eleven lines and ten spaces, are called —

THE GREAT STAFF

19. There may be as many different sounds as there can be different numbers of vibrations in a second. When two sounds are produced, one of which has twice the number of vibrations as the other, they blend so perfectly that they are regarded as the same sound notwithstanding the difference of pitch. One then is said to be the **octave** of the other.

20. This term implies the division of the entire series of sounds selected for artistic use into groups or sections of seven sounds, the *eighth* sound, or octave of a first, establishing a **unit of division** and at the same time becoming the initial sound of another series.

21. The series of seven sounds within the limit of the octave is called a **scale** (Latin *scala*, "a ladder") (secs. 59, 188).

22. The first seven letters of the alphabet,

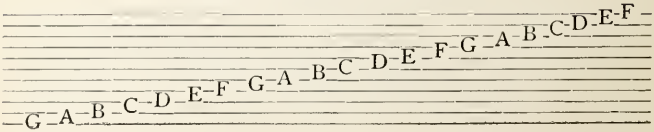
a, b, c, d, e, f, g,

are used to designate the distinction in pitch between the sounds in ascending succession in our seven-toned scale system. In speaking of an octave, the first letter is repeated.

23. In musical notation these letters are variously called "the *pitches*," "the *pitch-names*," and "the **letter-names**."

24. **Letter-names** for the

PITCHES OF THE LINES AND SPACES OF THE GREAT STAFF



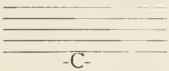
25. Because of the difficulty in readily distinguishing the pitch of so many lines and spaces, the middle C line is omitted, dividing the Great Staff into two staffs of five lines and four spaces each.

26. The lower staff is called the **Bass Staff.**

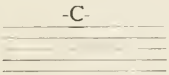
27. The upper staff is called the **Treble Staff.**

Treble: threefold; triple. In early part music, the **tenor** (sustaining) voice was really the principal part, the one to which the melody, or *cantus firmus*, was assigned. Above this were two other voice-parts named respectively alto (high; *i.e.* higher than the tenor) and treble (third part, or soprano; *i. e.* highest).

28. Middle C is represented on a **leger** (light) **line** between the staffs or on a leger line below the treble staff,



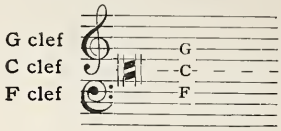
or on a leger line above the bass staff.



[The term *added line* is also used for leger line.]

29. In order to distinguish the two staffs, a line has been selected in each which always indicates the same pitch and accordingly bears the same letter-name.

30. Counting five steps or degrees upward from middle C to the second line of the treble staff, and five degrees downwards from middle C to the second highest (the fourth) line of the bass staff, these lines are found to indicate respectively the pitches G and F.



31. The sign 𝄞 upon the upper staff, its lower loop turning around the second line, is called the **G clef** (French, "key"), and is a variation of the Gothic letter G. The G clef, therefore, fixes G upon the second line of the treble staff (sec. 29).

32. The sign 𝄢 upon the lower staff, turning around the fourth line (reckoning upwards), is called the **F clef**, and is a variation of the Gothic letter F.

The F clef, therefore, fixes F upon the fourth line of the bass staff (sec. 29).

33. When the music for certain voices cannot be represented upon a staff without frequent use of leger lines, as in the case of low alto voices which require leger lines below the treble staff, a third and, unlike the others, movable clef, is sometimes used.

It is called the **C clef**, and is the sign for the pitch middle C on the central line in the Great Staff (secs. 29, 318–322). Like the other clef signs, it is evolved from a letter (C).

34. The *lines* and *spaces* by which musical sounds are represented are subject to certain modifications.

35. While the lines and spaces of the staff indicate pitches in regular succession, ascending or descending, they do not represent the *distances* between the successive pitches, since these distances are not always equal.

36. Sometimes the distance of pitch between a line and a space above or below is what is called **a tone**, and at other times it is a **half-tone**, or **semitone**.

Likewise the distance between a space and a line above or below may be either a tone or a semitone.

37. Within the limits of an octave our modern music system divides pitch into twelve parts nearly equidistant.

38. Each of the twelve parts or sounds is called a **semitone**, and is the smallest division recognized.

39. An ascending series of eight sounds, however, constructed upon a scientific basis, constitutes the **standard** and **normal scale** of modern music (secs. 19, 20, 21, 188).

40. In order that every division of pitch within the octave may be adequately represented to the eye, the lines and spaces of the staff are subject to modification by five characters which are separately used to indicate that the original pitch of a line or space is raised or lowered a semitone or a tone:

♯, ♭, ♮, ×, ♭♭, (secs. 252–256).

41. When it is desired to *raise* the pitch of a line or space a semitone, a **sharp**, ♯, is used.

42. When it is desired to *lower* the pitch of a line or space a semitone, a **flat**, ♭, is used.

43. The **natural**, ♮, is used to *sharp* (raise the pitch a semitone) a line or space previously affected by a *flat*, ♭.

44. The **natural**, ♮, is also used to *flat* (lower the pitch a semitone) a line or space previously affected by a sharp, ♯.

45. The **double-sharp**, ×, *raises* the pitch of a line or space previously affected by a sharp, ♯, still another semitone.

In other words, it raises the original pitch of the line or space a *tone*.

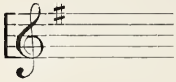
46. The **double-flat**, ♭♭, *lowers* the pitch of a line or space previously affected by a flat, ♭, another semitone.

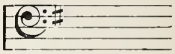
It therefore *lowers* the original pitch of the line or space a *tone*.

47. The **natural**, ♮, is still further employed to restore the original pitch of a line or space previously altered by a *double-sharp*, ×, or *double-flat*, ♭♭.

48. Because of its power to remove the effect of a *sharp*, a flat, a double-sharp, or a double-flat, thereby assuming the properties of all these signs, a **natural** is also called a **cancel**.

49. When a sharp, ♯, is placed *immediately after* the clef on the staff, the effect is intended to be permanent or continuous, and it is called an **essential**.





50. The vertical line at the beginning of each of the above staffs is called a **bar** (sec. 249).

51. From one to seven essential sharps may be placed upon the staff immediately after the clef, when the pitch of every line and space so marked is raised a *semitone*.

52. The modification extends to every line or space bearing the same letter-name as the line or space originally affected.

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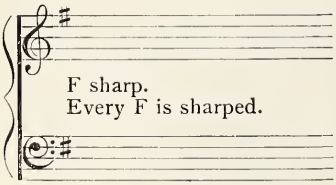

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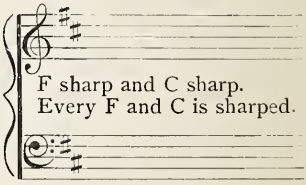

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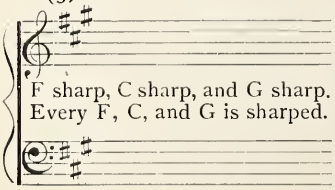

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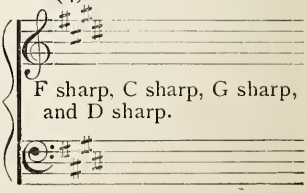

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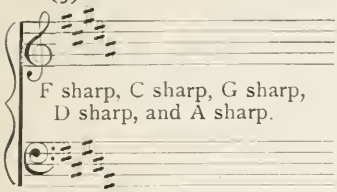

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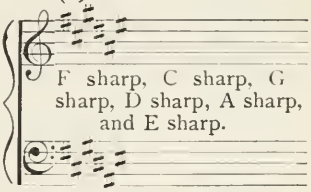

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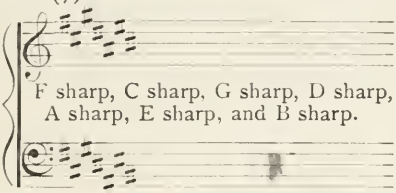
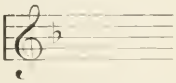
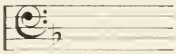


53. The vertical double-curved line which joins the two staffs in each of the above examples is called a **brace.**

54. The perpendicular line immediately after the brace is sometimes used alone, and then it too is called a **brace.**

55. When a flat, ♭, is placed *immediately after* the clef, the effect is intended to be permanent or continuous, and it is called an **essential.**





56. As many as seven essential flats may be placed immediately after the clef when the pitch of every line and space so marked is lowered a *semitone.*

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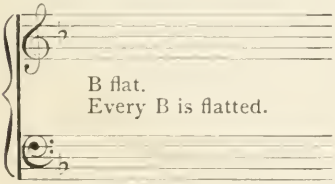

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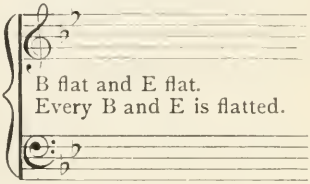
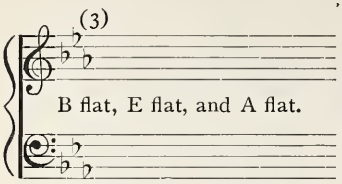
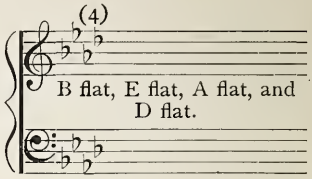
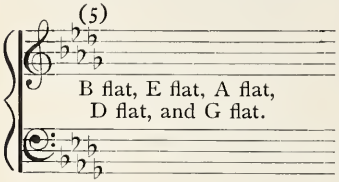
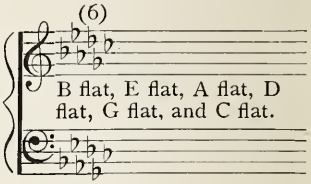
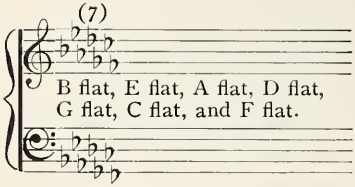












57. The modifications of pitch indicated by the flats in the above examples extend to every line and space bearing the same letter-names as the lines and spaces originally affected.

58. The five characters considered in sections 40–46 are frequently used temporarily when they are called **accidentals**, to distinguish them from essentials.

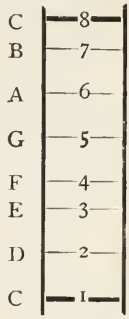
59. **The normal scale** (sec. 39) consists of five tones and two semitones in the following order:

Tone, tone, semitone, tone, tone, tone, semitone.

As the word *semitone* means "half-tone," it is evident that two semitones or "half-steps" in succession make a *tone*, or "whole-step" (secs. 45, 46).

60. The absolute and relative pitch of the sounds in the normal scale is expressed by the alphabetic names:

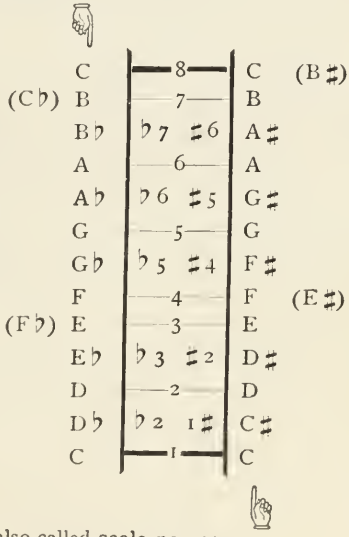
C, D, E, F, G, A, B, C.
1 1 ½ 1 1 1 ½



61. The lines and spaces of the staff, called **staff-degrees**, are understood to correspond with the degrees of the normal scale (**scale-degrees***) when absolute pitch is indicated at the beginning of the staff by a clef, and when the lines and spaces are not modified by *essentials* or *accidentals* (secs. 59, 60, 24, 31–33, 49, 55, 58).

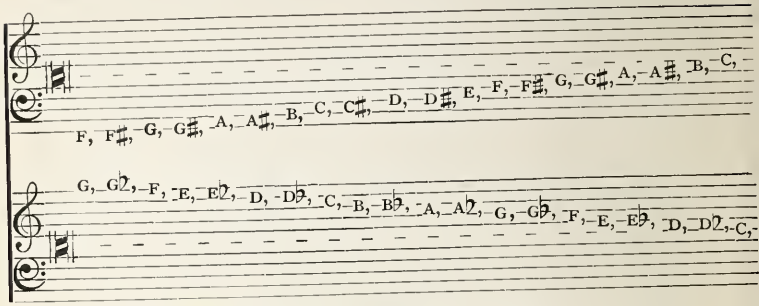
62. In the tenth century, the first seven letters of the alphabet, a, b, c, d, e, f, g, were used for a scale corresponding to the present normal scale, but their meaning has been changed in the tone-system of modern music.

63. Diagram showing the letter-names and the relations of the divisions of pitch within the normal octave.



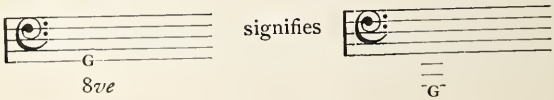
* Scale-degree numbers are also called **scale-names**.

64. These divisions are indicated on the Great Staff as follows:

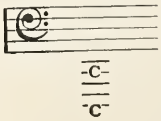


65. For convenience, and to facilitate the reading of music, sounds are often indicated an octave lower than their *real* pitch. A sign, 8ve or 8va, is then written *over* them to show that they must be read, sung, or played as if they had been written an octave *above* (sec. 289).

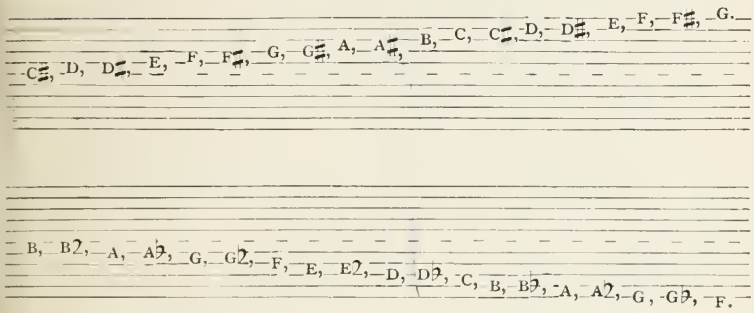
66. If the sign 8ve or 8va be written *below* the staff, it signifies "octave *lower*."



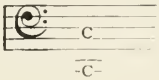
67. The octave below the C on the second line below the bass staff is called the **contra bass octave**:



CC, DD, EE, FF, etc.

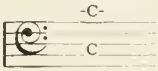


The next octave above is called the **bass or great octave**:



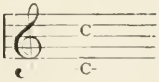
C, D, E, F, etc.

The next octave is called the **tenor or small octave**:



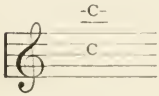
c, d. e, f, etc.

The next octave is called the **alto or once-marked octave**:



c̄, d̄, ē, f̄, etc.

The next octave is called the **treble or twice-marked octave**:



c̿, d̿, ē̿, f̿, etc.

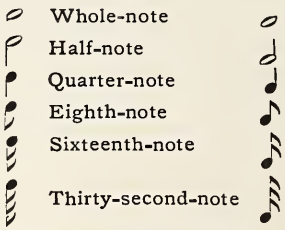
Chapter II

LENGTH OR DURATION OF SOUNDS

68. Pitch, as we have seen (sec. 15), is represented by lines and spaces.

69. Length or duration of sound is recorded and represented to the eye by the various shapes of characters or signs called **notes.**

70. There are six kinds of notes in common use:



71. Less commonly used notes are:

(1) The **double-note**; .

Its usual value is twice that of a whole-note.

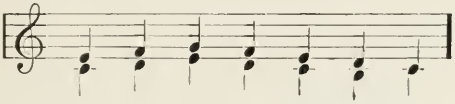
Sometimes this character is used to indicate indefinite duration; it is then called a *reciting-note*, or *long-note*.

(2) The **sixty-fourth** note, . (Secs. 259–266.)

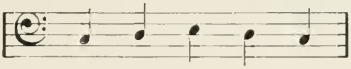
72. A note consists of one, two, or three parts, — the **note-head** (,), the **stem** (|), and one or more **hooks**, ( ). Hooks called *cross-strokes* are frequently extended from one stem to another, when these notes are of the same denomination, and notes thus joined are said to be *tied* (secs. 77, 291).

73. The *stem* of the note is turned up or down (secs. 70, 89).

74. When two series of notes occur upon a staff the stems of the notes of the lower series are turned *down*, while those of the upper are turned *upwards*.



75. When a single series only is represented upon a staff, the stem of a note on the third line may be turned either up or down; but when the note-head is *below* the third line, it is customary to turn the stem *upward;* when the note-head is *above* the third line, the stem should be turned *downward.*

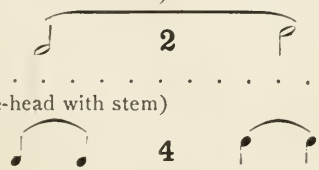


76. The system of names for the notes (sec. 70) indicates the metrical relationship existing between the tone-lengths.

77. The following table represents this relationship and gives their technical terms:

TABLE OF NOTES *

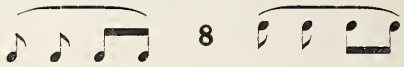
	Technical Terms.
Whole-note . . . . . (An open-note)	Semi-breve.
Half-note . . . . . (An open note-head with stem)	Minim.
Quarter-note . . . . . (A closed note-head with stem)	Crotchet.



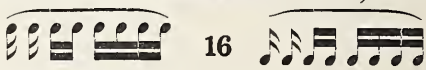
* A double-note; an open note between short vertical lines (sec. 71). Also called a breve (sec. 132).

TECHNICAL TERMS.

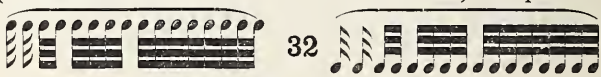
Eighth-note . . . . . Quaver.
(A closed note-head with stem and *one* hook)



Sixteenth-note . . . . . Semi-quaver.
(A closed note-head with stem and *two* hooks)



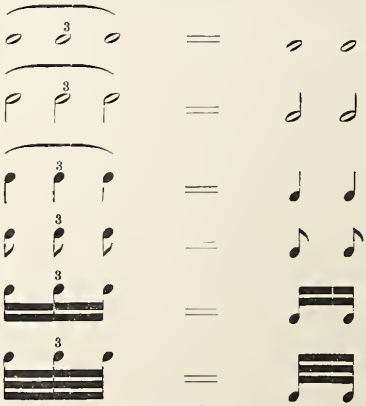
Thirty-second-note . . . . . Demi-semi-
(A closed note-head with stem and *three* hooks) quaver.



78. A group of three sounds of equal length may be performed in the time of two, rarely four, of equal length. They are then called a **triplet**, and the figure 3 placed over or under them.

79. A triplet is represented by three notes of the same denomination as the two which it equals.

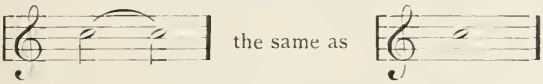
TRIPLETS



80. Other forms of grouping are: the **Quadruplet**, *four* notes for *three* of a similar denomination; the **Quintuplet**, *five* for *four*; and sometimes *less* than the full number of notes, as *two* for *three*, the **duolet**.

81. The time-value of a note may be modified by the following marks: (⌒) **the tie**, (·) **the dot**, and (𝄐) the **pause**.

82. **A tie** is a curved line above or below two notes of the same pitch which indicates that they are to be performed like one note equal in length to the two.



83. **A dot** after a note (as 𝅗𝅥. or 𝅥.) lengthens the note by one-half of its original value.

𝅝. is equal to a 𝅝 and a 𝅗𝅥 *tied.*
𝅗𝅥. is equal to a 𝅗𝅥 and a 𝅥 *tied.*
𝅥. is equal to a 𝅥 and a ♪ *tied.*
♪. is equal to a ♪ and a 𝅘𝅥𝅯 *tied.*

84. **A double-dotted note** is a note with two dots after it making its time-value three-quarters longer than it would be without the dots.

𝅝.. is equal to a 𝅝 and a 𝅗𝅥 and a 𝅥 tied to each other: 𝅝 𝅗𝅥 𝅥
𝅗𝅥.. is equal to a 𝅗𝅥 and a 𝅥 and a ♪ *tied.*
𝅥.. is equal to a 𝅥 and a ♪ and a 𝅘𝅥𝅯 *tied.*
♪.. is equal to a ♪ and a 𝅘𝅥𝅯 and a 𝅘𝅥𝅰 *tied.*

85. A dot *over* or *under* a note indicates that the note is to be sung or played somewhat *staccato* (secs. 135, 275).

86. **A pause** (a dot under or over a small curved line, 𝄐 or 𝄑) placed over or under a note indicates that the note

is to be prolonged at the pleasure of the performer. It is also called a **hold**, a **fermata** (Italian, *fermare*, stop, prevent).

RESTS

87. As duration of *sound* is represented by notes, so duration of *silence* is expressed by signs called **rests**.

88. There are various forms of rests indicating relative duration and these forms are named after notes of corresponding time-value (secs. 259–267.)

TABLE OF RESTS AND NOTES

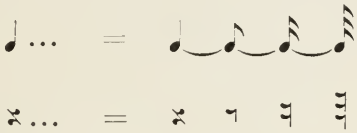
Rests.		Notes.
	Double	
	Whole	
	Half	
, or	Quarter	
	Eighth	
	Sixteenth	
	Thirty-second	

89. While the stem of a note may turn up or down, the stem of a rest is *always* turned down as shown above; and while the hooks of the former are always turned toward the *right*, those of the latter are always toward the *left*.

90. The duration of a rest, as of a note, may be extended one-half by a dot after it, as · (=).

91. A **double-dotted rest** is a rest with two dots after it making its time-value three-quarters longer than it would be without the dots. ·· is equal to a and a and a , etc.

92. Three dots are rarely placed after a note or rest; the third dot adds half the value of the second dot, for example,



93. The duration of a rest may also be extended indefinitely by a pause, 𝄐 (sec. 86).

Chapter III

RHYTHM AND METER

(TIME)

94. Heretofore we have only considered the signs for the two chief properties of musical sounds, pitch and duration, reserving for other chapters (XI, XII.) consideration of their remaining characteristics, *force* and *quality*.

Further progress leads us to the study of the *combination* of sounds in rhythmic order, the symmetrical and accentual grouping of successive sounds.

95. The word **rhythm**, from the Greek word, ῥυθμός, meaning *measured motion*, in its application to music signifies "the arrangement of musical phrases or sentences in regular metrical form, as regards accent and quantity."

96. The term **meter** (measure) is applied to the idea of divisibility of uniform movements (rhythm) into measures. The word **time** is commonly used to convey the same meaning. It is freely used in another sense also, as a synonym for *tempo* (sec. 296).

97. In music the sign commonly used to express the regularly recurring pulses or beats of equal duration is the *quarter-note* ♩.

98. The simplest metrical division of a rhythmical succession of beats is by *twos*, since one beat alone cannot determine an extent or measure of time.

99. The vertical lines dividing the beats into groups of **two** are called **bars**.

100. The space between two bars is called a **measure.** The word **bar** is frequently used in the sense of a *measure.*

101. From the very nature of rhythm ("alternation of tension (stress) and relaxation") a stress is given to the first note in every measure in sec. 98, but not to the second.

102. This *stress* or emphasis is called **accent.**

103. Rhythms may consist of two beats or parts, three beats, four beats, etc. Nearly all forms of rhythm, however, are derived from two kinds: *duple* and *triple.*

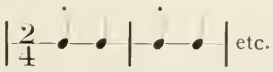
104. **Duple rhythm,** also called *two-part measure,* is a strong accent followed by a weak one (sec. 98).

Triple rhythm, also called *three-part measure,* is one strong accent followed by two weak ones:

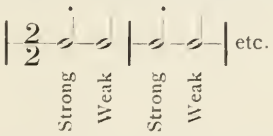
105. The principal accent (strong) is called the primary accent, and in the notation its place is indicated by the bar (sec. 99).

106. In two-part measure (duple rhythm) the parts or beats are designated *strong, weak,* and, as stated above (sec. 103). emphasized accordingly.

107. There are two common varieties of time in two-part measure:

Two-four time. 

(One beat to each quarter-note.)

Two-two time. 

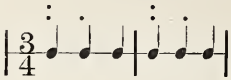
(One beat to each half-note.)

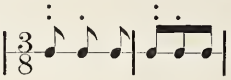
108. In three-part measure (triple rhythm) the parts or beats are designated:

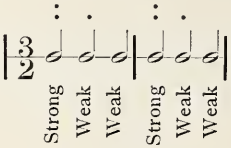
Strong, weak, weak;

sometimes, *strong, medium, weak* (sec. 103).

109. There are three common kinds of time in three-part measure:

Three-four time.  etc. (One beat to each quarter-note.)

Three-eight time.  etc. (One beat to each eighth-note.)

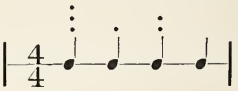
Three-two time.  etc. (One beat to each half-note.)

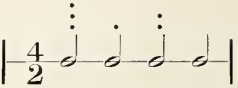
110. In **four-part** (quadruple) **measure** (an extension of duple rhythm) the parts or beats are designated:

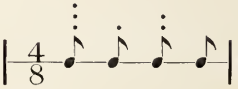
Strong, *weak*, *medium*, *weak*,

in order to distinguish it from two *two*-part measures.

111. There are three common kinds of time in four-part measure:

Four-four time.  etc. (One beat to each quarter-note.)

Four-two time.  etc. (One beat to each half-note.)

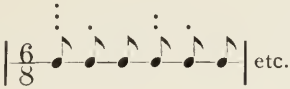
Four-eight time.  etc. (One beat to each eighth-note.)

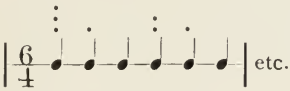
112. In **six-part** (sextuple) **measure** (duple-triple rhythm) the parts or beats are:

Strong, *weak*, *weak*, *medium*, *weak*, *weak*,

in order to distinguish it from two *three*-part measures.

113. There are two common kinds of time in six-part measure:

Six-eight time.  etc. (One beat to each eighth-note.)

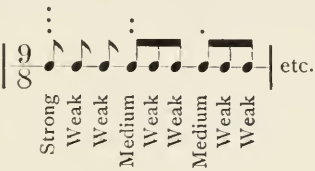
Six-four time.  etc. (One beat to each quarter-note.)

114. In rapid movement six-part measure is usually regarded in its original duple character, and each measure has two beats, — one beat for every group of three parts.

115. In **nine-part** (nonuple) **measure** (compound triple rhythm) the accents are:

Strong, weak, weak, medium, weak, weak, medium, weak, weak.

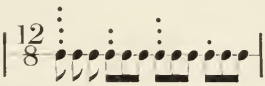
116. The common form of nine-part measure is:

Nine-eight time. 

etc. (One beat to each eighth-note.)

117. When the movement is rapid, 9-8 time has three beats in each measure, one to every group of three parts.

118. **Twelve-part** (dodecuple) **measure** (quadruple-triple rhythm) is commonly represented by

Twelve-eight time.  etc. (One beat to each eighth-note.)

119. In freer movement, four beats are given in every measure in 12-8 time, — one beat to every group of three parts.

120. Rarer varieties of compound rhythms are 5-4 and 7-4 times. The former, according to its construction, is counted 1, 2, 3, 1, 2 (3-part + 2-part measure) or 1, 2, 1, 2, 3, (2-part + 3-part measure) — always 3-4 and 2-4, or the reverse, with the heavier emphasis, of course, on the first beat. 7-4 time is compounded of 4-4 and 3-4 times.

121. It is seldom the case that in actual performance the accents which have been analyzed in all the foregoing species of rhythm are perceptible to the listener. Indeed, in most instances, were the accentual relations of the beats in a composition actually disclosed the artistic effect would be destroyed.

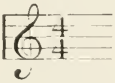
Chapter IV

TIME SIGNATURES

122. In order to indicate the meter or time of a piece of music, a sign is placed at the beginning, after the key-signature (secs. 220, 259), called the **time-signature** (sec. 260).

123. Apart from the staff, the time-signature usually consists of two numerals, one above the other, with or without a line between them; $\frac{2}{4}$ $\frac{3}{4}$ etc.

Upon the staff, the upper figure extends from the highest line to the middle line, and the lower figure extends from the middle line to the lowest line:



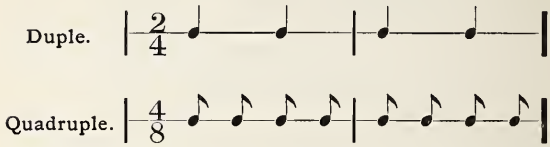
The upper numeral indicates the number of parts or beats contained in each measure, and the lower numeral the kind of note used to represent the parts or beats.

124. The time-signature is not repeated upon the succeeding staffs for the same voice-part.

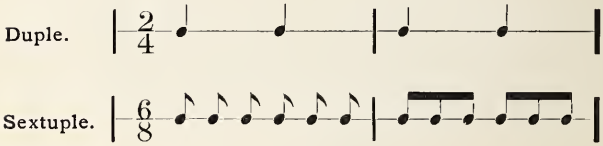
125. Different time-signatures are used to express the same kind of rhythm; thus duple rhythm may be indicated either by $\frac{2}{1}$, $\frac{2}{2}$, $\frac{2}{4}$, $\frac{2}{8}$, etc., triple rhythm, by $\frac{3}{1}$, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, $\frac{3}{16}$, etc. (secs. 107-120, and Table of Time Signatures, p. 28).

126. Since each part of a measure is itself divisible, secondary groups of two-part and three-part rhythms may be obtained by subdivision of the principal parts.

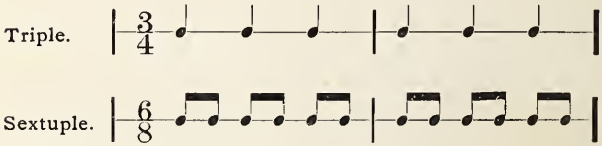
The division of each of the parts in two-part measure (duple rhythm) into the first order of rhythm (two-part) produces four-part measure (quadruple rhythm).



The division of each of the parts in two-part measure into three parts, the second order of rhythm (triple rhythm), produces six-part measure or sextuple rhythm.



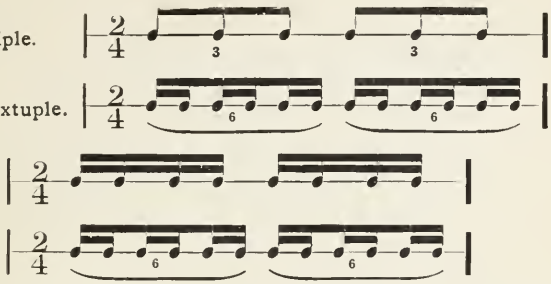
127. Another form of six-part measure may be obtained from *three-part* measure by dividing each part into the first order of rhythm (duple rhythm).



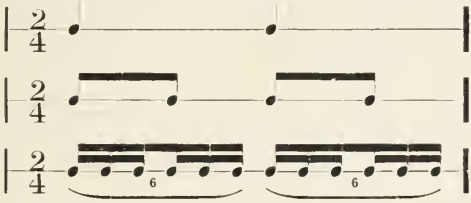
This form of compound rhythm is only used, however, in isolated groups, as when a *triplet* (sec. 78) is subdivided into a *sextolet*, or *sextuplet*, and the six notes are to be performed in the time of four of the same denomination.

Duple-triple.

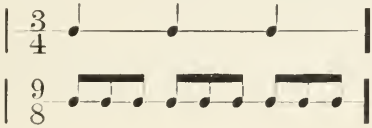
Duple-sextuple.



The sextuplet must not be identified with the **double-triplet** oftentimes similarly represented and named.



128. By subdivision into triple rhythm of each part in three-part measure, nine-part measure, or *nonuple* rhythm, is derived.



129. Twelve-part measure, *dodecuple* rhythm, is derived from four-part rhythm.

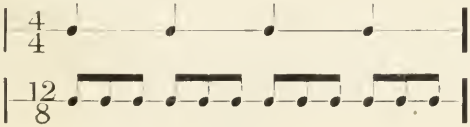


TABLE OF TIME SIGNATURES

	Simple				Compound				
	Signature	Value of each measure	No. of beats	Value of each beat	Signature	Value of each measure	No. of beats	Value of each beat	
Duple	¢ or 2/2	𝅗𝅥 𝅗𝅥	2	𝅗𝅥	6/4	𝅗𝅥. 𝅗𝅥.	2	𝅗𝅥.	Compound duple **Sextuple**
	2/4	♩ ♩	2	♩	6/8	♩. ♩.	2	♩.	
	2/8	♪ ♪	2	♪	6/16	♪. ♪.	2	♪.	
Triple	3/2	𝅗𝅥 𝅗𝅥 𝅗𝅥	3	𝅗𝅥	9/4	𝅗𝅥. 𝅗𝅥. 𝅗𝅥.	3	𝅗𝅥.	Compound triple **Nonuple**
	3/4	♩ ♩ ♩	3	♩	9/8	♩. ♩. ♩.	3	♩.	
	3/8	♪ ♪ ♪	3	♪	9/16	♪. ♪. ♪.	3	♪.	
Quadruple	¢ or 4/2	𝅗𝅥 𝅗𝅥 𝅗𝅥 𝅗𝅥	4	𝅗𝅥	12/4	𝅗𝅥. 𝅗𝅥. 𝅗𝅥. 𝅗𝅥.	4	𝅗𝅥.	Compound quadruple **Dodecuple**
	C or 4/4	♩ ♩ ♩ ♩	4	♩	12/8	♩. ♩. ♩. ♩.	4	♩.	
		♪ ♪ ♪ ♪	4	♪	12/16	♪. ♪. ♪. ♪.	4	♪.	

130. The signs C and ¢ (barred semicircle or barred C) in the above table are variably used. C may be the time-signature for any form of quadruple rhythm. ¢ commonly signifies two-part rhythm, but the two signs have been used interchangeably. For the sake of clearness these letters should be superseded by the figured time-signatures given in the table.

131. The time-signature C is usually called **Common Time** and is generally applied to all duple and quadruple rhythms. Its proper meaning, however, is four-four $\left(\frac{4}{4}\right)$ time, — four quarter-notes in every measure.

It is derived from the semicircle C, used in ancient music to denote duple rhythm, called *imperfect* rhythm (*tempus imperfectum*), wherein the breve (sec. 77) was divided into two semibreves, while *triple* rhythm, which was considered *perfect* rhythm (*tempus perfectum*), wherein the breve was worth three semibreves, was represented by the circle O.

The sign C, accordingly, is not the initial of the word "common."

132. The time-signature ₵ is also derived from the ancient form ₵ (see sec. 131), which indicated a double rate of speed, breves to be sung as semibreves, semibreves as minims, minims as crotchets, etc. (sec. 77). It is often called **alla breve** and **alla** or **a capella.**

The term **alla breve** originally denoted a species of time in which every measure contained a breve (hence the name, *in the style of a breve*).

Since the breve, however, is in little use at the present day, breve measure being quadruple (‖𝅜‖ = 𝅗𝅥 𝅗𝅥 𝅗𝅥 𝅗𝅥) is more frequently divided into two duple measures and is appropriately indicated by the ₵.

The term **alla capella** (in the church style) has different meanings.

It is used to specify unaccompanied vocal music or vocal music with an instrumental accompaniment which is a mere doubling of the voice-parts.

When applied to rhythm, *alla capella* is the equivalent of *alla breve.*

References

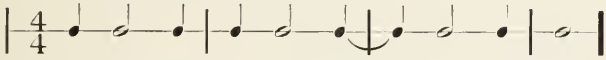
Music, H. C. Banister.
Musical Theory, J. Curwen.
The Music Teacher, J. Evans and W. G. McNaught.
Harmony and Meter, M. Hauptmann.
Musical Expression, M. Lussy.
School of Composition, A. B. Marx.
Evolution of the Art of Music, C. Hubert H. Parry.
Musical Forms, E. Pauer.
Musical Form, E. Prout.
Catechism of Musical History, H. Riemann.
Harmony Simplified, H. Riemann (p. 173).
Articles on Accent, Measure, Meter, Rhythm, etc., in Grove's Dictionary, Riemann's Dictionary, etc.

Chapter V

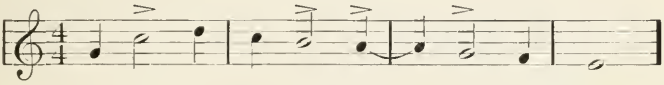
ADDITIONAL SIGNS AND EFFECTS

133. Regular rhythmic accent may be disturbed by beginning a sound on an unaccented beat or pulse, and sustaining it into the next accented one.

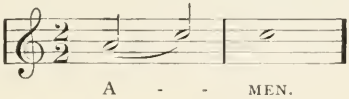
The effect is called **syncopation** (*a cutting short*) and may extend from measure to measure (secs. 81, 82).



134. The anticipation or disturbance of accent may be more strongly marked by the use of a sign called an **emphasis**, **stress**, or **accent**, ∨, >, or ∧.

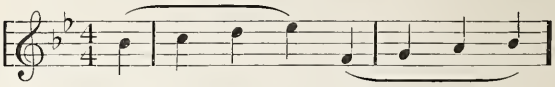


135. A curved mark connecting two or more notes that are to be sung to a single syllable is called a **slur**.



A slur is distinguished from a tie (sec. 82) in that it always connects notes of different pitch.

A more sweeping curve placed above or below the notes is called a **legato** (Italian, *legare*, tie). It indicates that the notes which it includes are to be performed in a smooth, connected manner.



The term **phrase-mark** is also applied to this sign. Its opposite effect is **staccato** (secs. 85, 275).

Chapter VI

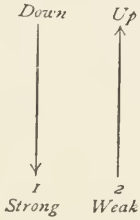
CONDUCTING

136. When a number of persons have to sing or play together, they are usually directed by a **conductor**, whose province it is to indicate to the performers the rhythm and expression (secs. 95, 295) of the composition by means of motions of the hands or a baton.

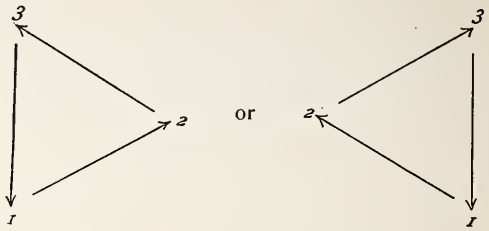
His chief duty is to mark the time clearly; *i. e.* to give the rate of speed (the *tempo*) and mark the parts or beats in every measure.

The usual principal movements are as follows: the first beat or part of a measure is indicated by a down stroke, the last beat by an upward stroke, while the beats between the first and last are neither high nor low.

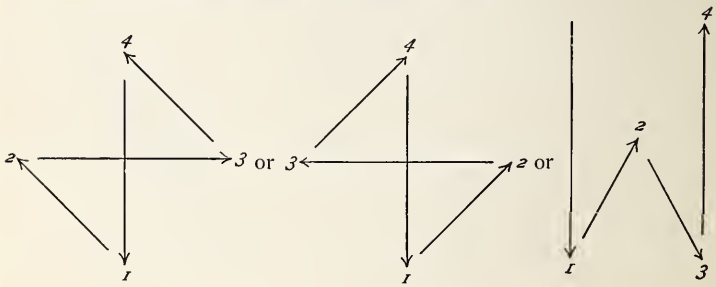
137. *Duple* measure is marked thus: —



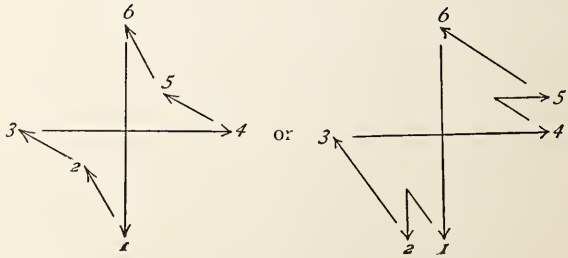
138. *Triple* measure is marked thus:



139. *Quadruple* measure is marked thus:

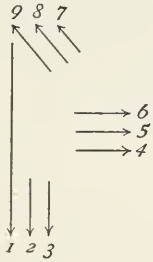


140. *Sextuple* (compound duple) measure when the *tempo* is slow is marked thus:



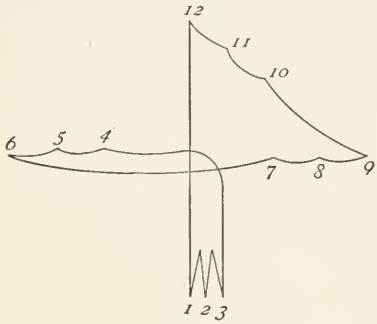
(See also sec. 114.)

141. *Nonuple* (compound triple) measure in slow time is beaten thus:



1, 2, 3 down; 4, 5, 6 to the right; 7, 8, 9 up.

142. *Dodecuple* measure (compound quadruple or twelve-part measure) in slow time is marked thus:



1, 2, 3 down; 4, 5, 6 to the left; 7, 8, 9 to the right; 10, 11, 12 up.

Consult references mentioned at the end of Chapter XII.

Chapter VII

INTERVALS

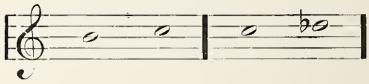
143. The difference or distance in pitch between two sounds is called an **Interval.**

144. If the two sounds are considered simultaneously the interval is **harmonic**; if successively, **melodic.**

145. Intervals may be reckoned upward or downward. They are always calculated upward unless otherwise expressly stated.

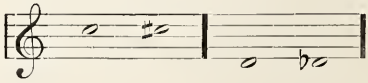
146. The semitone (secs. 37, 38) is the **standard of measurement** in the calculation of intervals.

147. A semitone is *diatonic* (sec. 148) when it exists between two *different* degrees of the scale; as from 7 to 8, 1 to ♭2; or, *e* to *f*, *c* to *d* flat, etc. (secs. 59, 60, 63, 64, 191).



148. The word "diatonic" means "through the tones or degrees of the scale" (secs. 39, 59, 188, 191).

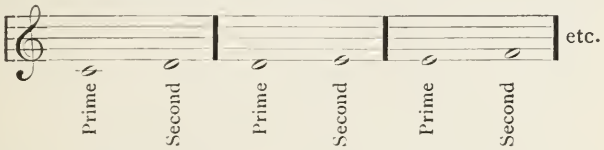
149. A semitone is *chromatic* when it exists between two sounds of the same name, one altered by a sharp, flat, or other transposing sign; as from 1 to ♯1, 2 to ♭2; or c to c♯, d to d♭, etc. (secs. 63, 64):



150. The word "chromatic" means "colored," and is used in a figurative sense (sec. 225).

151. Intervals may be calculated from any degree or sound of the scale, and the first sound selected is called *prime;* the next sound above or below is called a *second;* the next sound is a *third* in relation to the *first*, etc.; *e. g.*,

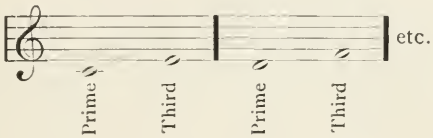
Seconds: c, prime — c to d, a second;
d, prime — d to e, a second;
e, prime — e to f, a second, etc.



152. The normal scale (sec. 59) comprises seven seconds, c to d, — d to e — e to f, etc., whose intervals are not all equal. Two of the seconds, e to f and b to c, are *small* seconds (semitones), while the remaining five are *greater* seconds (tones).

153. This difference of distance constitutes the *quality* of an interval; the small seconds are called *minor* seconds and the greater, *major* seconds.

154. Thirds: c, prime — c to e, a third;
d, prime — d to f, a third, etc. (See sec. 59.)



155. In constructing a *third* on each degree of the scale, differences of quality will again be observed; namely, three *major* thirds, each comprising two tones, c to e — f to a — g to b; four *minor* thirds, each comprising a tone and a semitone, — d to f — e to g — a to c — b to d. (The *seventh* third is derived by extending the measurement into the next octave higher.) (See diagram, p. 43.)

156. Fourths, etc. Intervals of fourths, fifths, etc., should be constructed upon every degree of the scale and their qualities noted, though these qualities receive various names (sec. 160, table, p. 42 — diagram, p. 43).

157. The distances from the key-note (sec. 199) to the other sounds of a major scale (sec. 194) are "the standards with which all possible intervals are compared and from which they are named."

158. The standard intervals are:

1 to 1 (C to C, F to F, etc.), is called unison or prime.
1 to 2 (C to D, F to G, etc.), is called a second.
1 to 3 (C to E, F to A, etc.), is called a third.
1 to 4 (C to F, F to B♭, etc.), is called a fourth,
etc., etc.
1 to 8 (C to $\bar{c}$, F to $\bar{f}$, etc.), is called an octave.

159. The above intervals, since they lie within an octave, are designated *simple* intervals. Intervals larger than an octave are called *compound* intervals:

A 9th = a compound 2nd.
A 10th = a compound 3rd.
etc., etc.
A 15th is called a double octave.

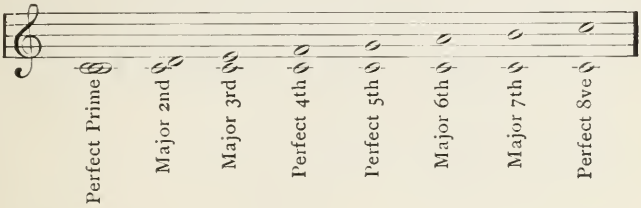
160. Upon examining the 2nds and 3rds, found in the normal major scale (secs. 152–155), we discovered that they differed as to quality (extent). This difference was expressed by the terms *major* and *minor*. Three other names are necessary in order to accurately describe all possible intervals. The five names are *perfect*, *major*, *augmented*, *minor*, and *diminished*.

(Regarding the use of the word *perfect*, see sec. 173.)

161. Taking the normal major scale as a basis for classification and beginning with the first degree or tonic (sec. 237), it is evident that we can reckon therefrom a 2nd, a 3rd, a 4th, a 5th, a 6th, a 7th, and an octave (8ve).

162. The tonic itself, being prime or unison, though not really an interval, is always included in the list of intervals.

163. The prime, 4th, 5th, and 8ve are called *perfect*, and the 2nd, 3rd, 6th, and 7th major;

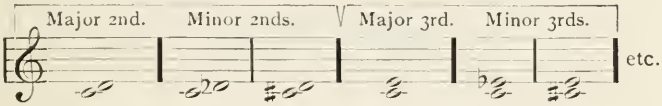


164. An interval one semitone less than a major interval is called a *minor* interval.

165. A major interval may be changed to minor by lowering its upper note a chromatic semitone or raising its lower note a chromatic semitone (sec. 149).

The change, of course, is effected by the use of an accidental (sec. 58).

166. Conversely, a minor interval may be changed to major by raising its upper note a chromatic semitone or lowering its under note a chromatic semitone.



167. Perfect and major intervals become *augmented* intervals when they are extended by a chromatic semitone, either by raising the upper note or lowering the under note by an accidental.

168. An interval is called *diminished* when it is a chromatic semitone less than a perfect or minor interval.

169. An interval may be *inverted* by transposing its lower note an octave higher or its higher note an octave lower.

INVERSION OF INTERVALS

170. Inverted primes become octaves.
" 2nds " 7ths.
" 3rds " 6ths.
etc., etc.

171. Deduct the number of any interval from 9, the remainder will be the number of its inversion. Example: $\bar{c}$ to $\bar{c}$ in the first measure of the above illustration is unison, prime, or 1st. Deduct 1 from 9, the remainder is 8 and the inverted interval will be an 8th or octave, $\bar{c}$ to $\bar{\bar{c}}$.

172. Perfect intervals, when inverted, remain perfect, major intervals become minor, minor intervals become major, augmented intervals become diminished, and diminished intervals become augmented.

173. It will be noticed that perfect intervals alone retain their original quality, or character, becoming neither greater nor less by the process of inversion. This is one reason attributed to the use of the word "perfect."

174. The expression *direct interval* is sometimes used as opposed to *inverted interval*, meaning an interval in its usual position.

175. There are two classes of intervals, *consonant* and *dissonant*.

176. A **consonance** is a simultaneous combination of two sounds which, by itself, produces a satisfactory effect. Also called **concord**.

177. There are two kinds of consonances: *perfect* and *imperfect.*

178. The **perfect consonances** are standard firsts or the unison; fourths, fifths, and octaves (sec. 157).

179. The **imperfect consonances** are the major and minor 3rds and 6ths.

180. A **dissonance** or **discord** is a combination of two sounds which, by itself, produces an unsatisfactory or incomplete effect.

181. The dissonances are major and minor 2nds, 7th, 9ths, 11ths, and 13ths, with all augmented and diminished intervals.

182. In musical composition a discord must ultimately *resolve* upon a concord.

Hence the progression from a discord to a concord is called a **resolution.**

183. A *diatonic* interval is one that occurs between two sounds of a normal major or minor scale.

184. A *chromatic* interval is one that occurs between a sound of a normal scale and a sound foreign to that scale.

185. An *enharmonic* interval is a unison represented by a change of notation:

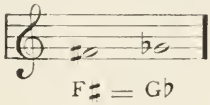


TABLE OF THE DIATONIC INTERVALS *

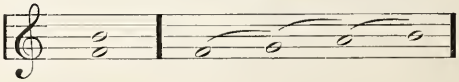
BETWEEN C AND ITS DOUBLE–OCTAVE

Read each column upwards

Perfect Octave . . .	C	D	E	F	G	A	B
Major 7th . . .	B			E			
Minor 7th . . .		C	D		F	G	A
Major 6th . . .	A	B		D	E		
Minor 6th . . .			C			F	G
Perfect 5th . . .	G	A	B	C	D	E	
(1) Augmented 4th or † Tritone . . . (2) Diminished 5th . . .				(1) B			(2) F
Perfect 4th . . .	F	G	A		C	D	E
Major 3rd . . .	E			A	B		
Minor 3rd . . .		F	G			C	D
Major 2nd . . .	D	E		G	A	B	
Minor 2nd . . .			F				C
Prime . . .	C	D	E	F	G	A	B
	1	2	3	4	5	6	7

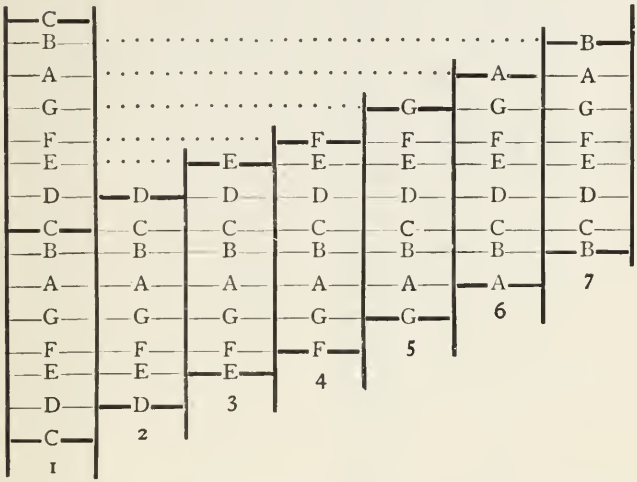
* From "School Music Review" (slightly altered), edited by Dr. W. G. McNaught.

† Because of the three *tones* contained in this interval



it is also called the *tritone.*

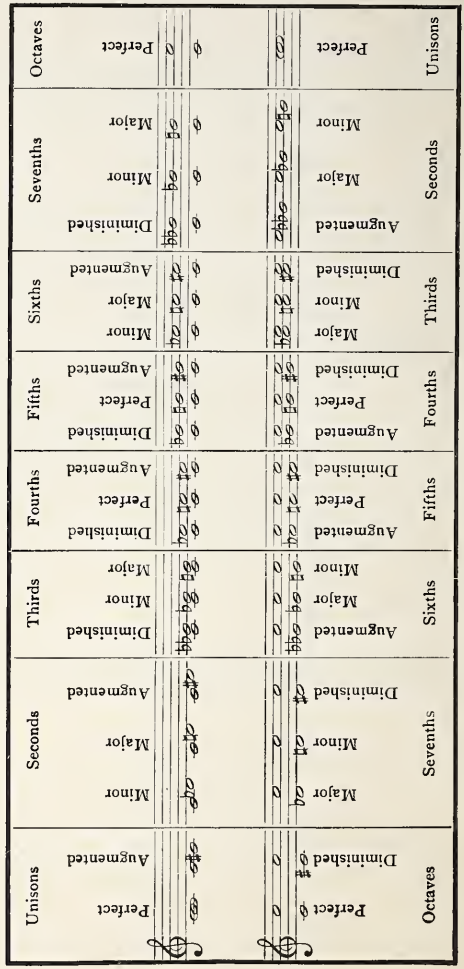
DIAGRAM OF THE COLUMNS OF INTERVALS IN THE FOREGOING TABLE



The figures below the above Diagram and the preceding Table indicate corresponding columns.

TABLE OF INTERVALS *

WITHIN AN OCTAVE FROM THE PITCH C



* From "Harmony: its Theory and Practice," by E. Prout.

186. The computation of all intervals is based upon the major scale ; *i. e.* a given interval is measured and named by comparison with a major scale based on the lower tone of the interval ; and, accordingly, accurate knowledge of the essentials of every key (secs. 49–57) and their meaning (see following chapter) is a necessity in order to insure intelligent application of the pitch-modifying signs (sec. 40) to intervals based upon different primes.

187. The theory and practice of intervals are introductory to the study of combinations of sounds : *i. e.* chords and harmony in general.

Chapter VIII

SCALES

188. A determinate series of sounds, differing from each other by well-defined steps or degrees, is called a **scale** (secs. 19–21, 39, 59).

189. In the modern system of music there are two kinds of scales: *diatonic* and *chromatic*.

190. The interval from any sound of the scale to the next sound above or below is called a **degree**: as from 1 to 2 (c to d), from 4 to 3 (f to e).

191. A series of eight sounds proceeding in numerical order from the first degree to the eighth degree by five tones and two semitones is termed a **diatonic scale**.

In other words, a diatonic scale is a scale consisting of tones and semitones (secs. 39, 59, 148).

192. A series of twelve semitones within an octave is called a **chromatic scale**.

In other words, a chromatic scale is a scale consisting entirely of semitones (secs. 63, 64, 150).

193. Of the many diatonic forms or *modes* in which the scale degrees have been arranged at different periods in the history of music, only two are employed in modern music, — *major* and *minor*, named thus because of the nature of the interval between the first and third degrees of the scale.

(For explanation of the various modes see "Grove's Dictionary of Music and Musicians," "Macfarren's Six Lectures on Harmony," "Riemann's Dictionary," etc.)

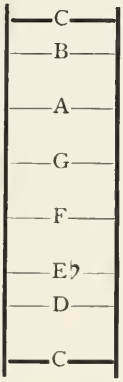
194. A diatonic scale between whose first and third degrees the interval is a *major* third is called a **major scale** (sec. 155 and diagram, page 43).

195. A diatonic scale between whose first and third degrees the interval is a *minor* third is called a **minor scale** (sec. 155 and diagram, page 43).

DIAGRAMS

Major Scale *

Minor Scale *



Major Scale *

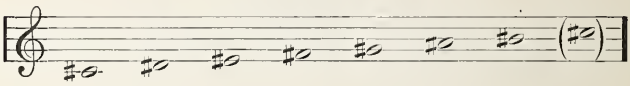
Minor Scale *

* A major and a minor scale which begin upon the same pitch are called **Tonic Major** and **Minor scales** (sec. 199).

The minor scale here represented is therefore the tonic minor of the C major scale; namely, C minor.

196. Since there are seven sounds in the normal scale, C major, and since each degree may be *raised* a semitone, *i. e.*, *sharped*, by sharping the first degree and erecting a *major* scale thereupon, we obtain a major scale having seven sharps (secs. 51, 52, 63):

c♯, d♯, e♯, f♯, g♯, a♯, b♯, (c♯)



197. It follows that in the system of music there must be seven different pitch representations of the major scale besides its original representation of unaffected notation (sec. 195).

198. The melodic and harmonic relationship which exists between the twelve sounds within the compass of an octave is expressed by the words **key** and **tonality**.

199. The fundamental or first sound of a scale is called the **tonic**, or **key-note**, to which sound the other eleven bear a fixed and definite relationship.

The pitch of the entire scale is accordingly determined by the pitch of its key-note.

200. The definite pitch by which the relations of the scale are so governed is also expressed by the word **key**; the scale or composition taking its key-*name* from the pitch of the key-*note*. As when we say, "the scale in the key of C;" or, "Symphony in (the key of) A major."

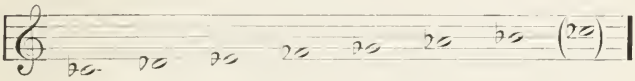
201. The change from a higher to a lower tonality or *vice versa* effected by a change of key-note is called **Transposition**.

202. We have seen (secs. 196, 197), that the normal major scale may be transposed into seven different keys: (1) a key having one sharp, (2) a key having two sharps, etc.

203. Again, since each of the seven sounds of the normal scale, C major, may be raised a semitone, each may likewise

be *lowered* a semitone, *i. e. flatted.* Consequently we obtain a major scale having seven flats (secs. 56, 57, 63).

c♭, d♭, e♭, f♭, g♭, a♭, b♭, (c♭)



204. From this we must infer that the major scale may be transposed into seven *flat* keys in addition to the seven *sharp* keys (sec. 196).

205. The total number of *major* keys, therefore, including the original normal key, C major, is fifteen.

206. Applying the same process of reasoning to the *minor* mode of the diatonic scale, we conclude that there are fifteen minor keys.

207. Our modern tonal system, therefore, comprises thirty keys, fifteen major and fifteen minor, which we shall now proceed to consider in the order of their relationship.

208. The fundamental major scale (sec. 59) is divisible into two sections of four sounds each, and these two sections are similar in construction, each containing the interval of a semitone between the two upper sounds, and a tone between the other sounds.

209. A series of four sounds thus arranged

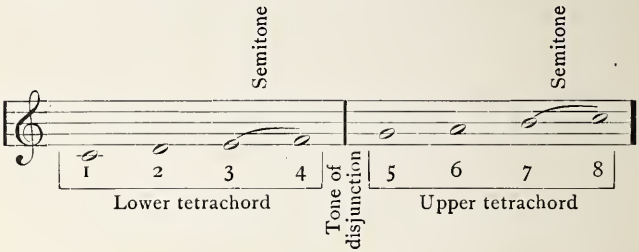
1st degree to 2nd degree — 2nd to 3rd — 3rd to 4th

Tone tone semitone

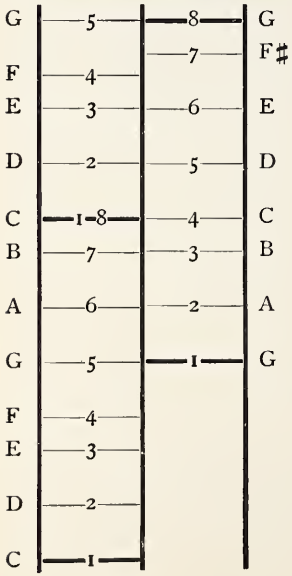
is called a **Tetrachord**, — a Greek word signifying an instrument of four strings.

210. The major scale, therefore, consists of two such tetrachords placed one above the other, with the interval of a tone between the highest note of the lower tetrachord and the lowest note of the upper (sec. 59).

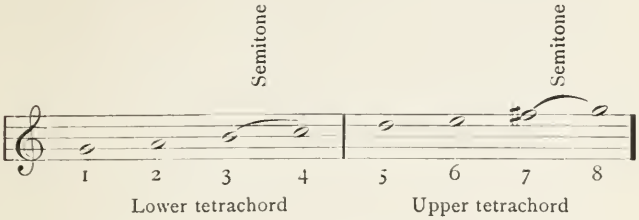
211. The tone separating the two tetrachords is called the **diazeuctic tone**, or "tone of disjunction."



212. By taking the upper tetrachord of this fundamental scale as the lower tetrachord of a similar scale, the first transposition of the major scale is effected and a new key established.

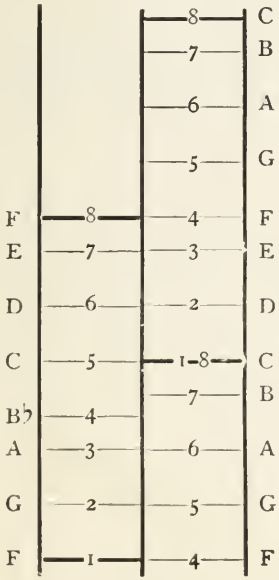


213. The diagram illustrates the relationship between the two keys, C major (on the left) and G major (on the right). It also shows the necessity for the new letter-name, F sharp, for the seventh degree of the scale in the new key, G major.



214. This constructive process is continued until the key containing seven sharps is reached (sec. 196), when further progress in sharp keys is not necessary.

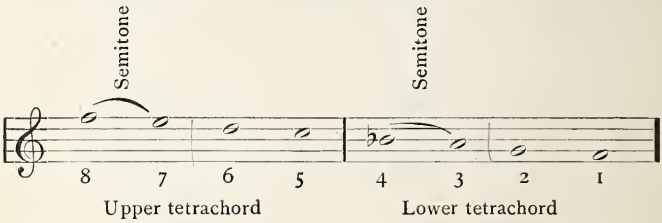
215. It should be observed that each succeeding scale is erected or based upon the fifth degree of the scale from which it is derived.



216. Accordingly the fundamental major scale may be and is itself based upon the fifth degree of a preceding scale; as the upper tetrachord of the normal scale may become the lower tetrachord of a higher scale, so its lower tetrachord may be considered as the upper tetrachord of a lower scale of similar construction.

217. As the series of sharp keys is obtained by basing each key upon the *over*-fifth of a preceding key, so another series is derived by erecting a scale upon the *under*-fifth degree of a preceding key counting *downward* from the tonic or key-note. (In the diagram (sec. 216) it will be seen that the new key, F, is based upon the *under*-fifth of the original key, C.)

218. In this inversion of the process of transposition it will be observed that the upper tetrachord of the new key (on the left) already conformed to the lower tetrachord in the model, but in order that the lower tetrachord of the new key should consist of correct intervals it was necessary to lower the 4th degree a semitone and designate it B flat.



219. By pursuing this plan until the scale having seven flats is reached (sec. 203), the system of fifteen major keys is completed.

220. It is customary to place all sharps or flats necessary to a scale or key at the beginning of the staff, immediately after the clef sign, and in the order in which they appeared during the course of scale-construction indicated above; when so placed, they are called **Key-Signatures**.

DIAGRAM, SHOWING KEY RELATIONSHIP

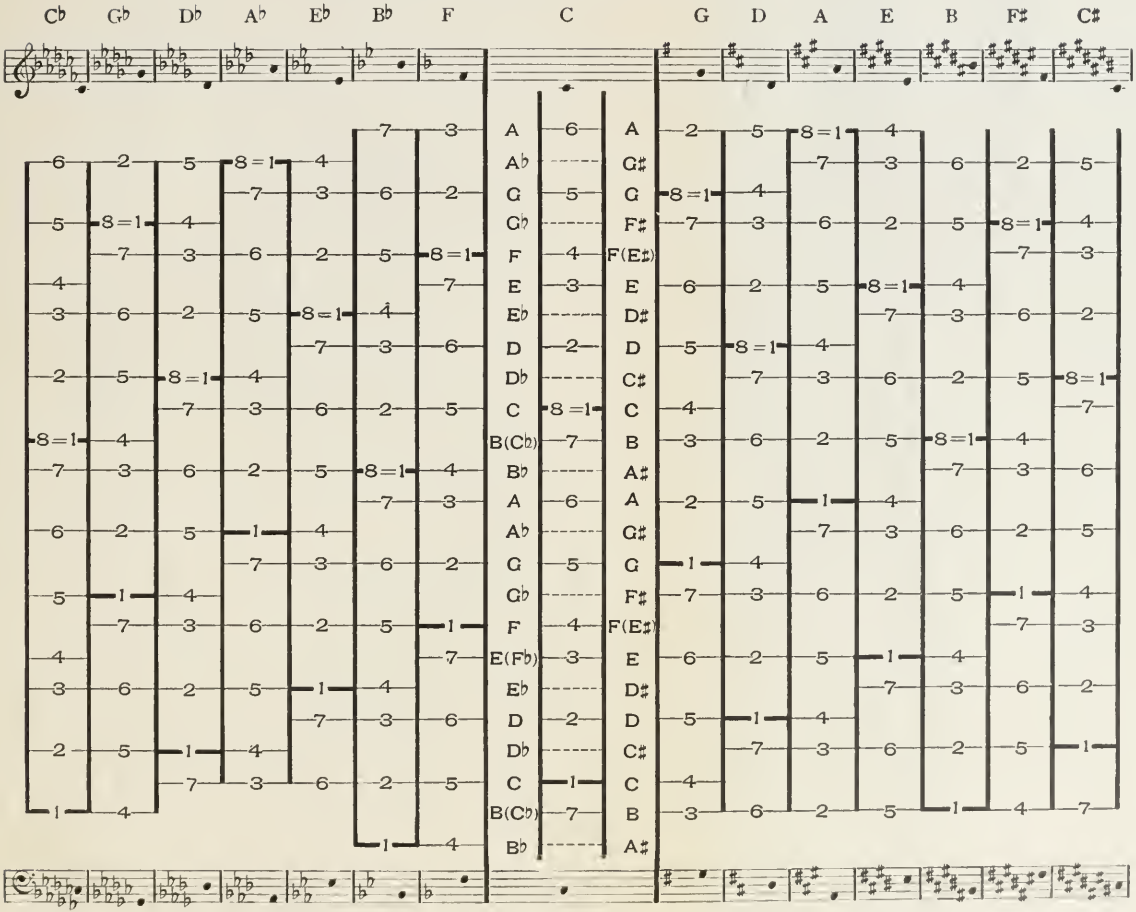


TABLE OF MAJOR KEYS

Key	Signature	
C	[no signature]	
G	1 sharp . . .	F♯
D	2 sharps . . .	F♯, C♯
A	3 sharps . . .	F♯, C♯, G♯
E	4 sharps . . .	F♯, C♯, G♯, D♯
B	5 sharps . . .	F♯, C♯, G♯, D♯, A♯
F♯ . . .	6 sharps . . .	F♯, C♯, G♯, D♯, A♯, E♯
C♯ . . .	7 sharps . . .	F♯, C♯, G♯, D♯, A♯, E♯, B♯.
F	1 flat	B♭
B♭ . . .	2 flats	B♭, E♭
E♭ . . .	3 flats	B♭, E♭, A♭
A♭ . . .	4 flats	B♭, E♭, A♭, D♭
D♭ . . .	5 flats	B♭, E♭, A♭, D♭, G♭
G♭ . . .	6 flats	B♭, E♭, A♭, D♭, G♭, C♭
C♭ . . .	7 flats	B♭, E♭, A♭, D♭, G♭, C♭, E♭.

221. The key-signatures and key-notes of the fifteen major keys are shown in the diagram on the preceding page ; also the derivation of each key.

222. The diagram is very useful in explaining the origin and construction of all the major keys in what is known as the modern tone-system.

The column of figures in the center, and the letter-names on either side of the vertical lines supporting the short horizontal lines between, indicate the tones of the diatonic and chromatic scales based upon the fundamental tone C whose number is 1 or 8.

On the right of the central column are shown the sharp keys erected upon the fifth degree of its predecessor until the key of C sharp is reached, having seven sharps. Beyond this it is not practical to proceed in the same direction.

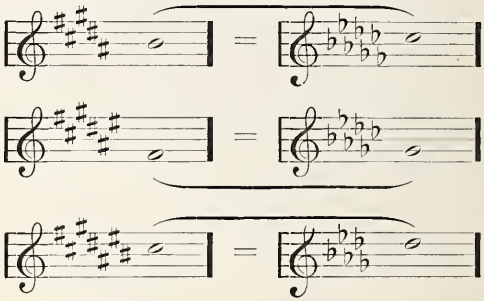
On the left of the central column are shown the flat keys erected upon the under-fifth degree (or fourth degree) of the original C scale.

They proceed towards the left until the key of C flat, having seven flats, is reached, beyond which it is not practical to continue in that direction.

It will be found on examination that there are three pairs of keys identical in pitch (as indicated by the equivalent horizontal lines), yet not identical in name.

This identity in tone is termed **enharmonic** relationship. By substituting one key for the other in the same pair and returning to the central column or key, we are able to comprehend the unity of the system of keys or scales through what is termed the **Circle by Fifths.**

Enharmonic Equivalents



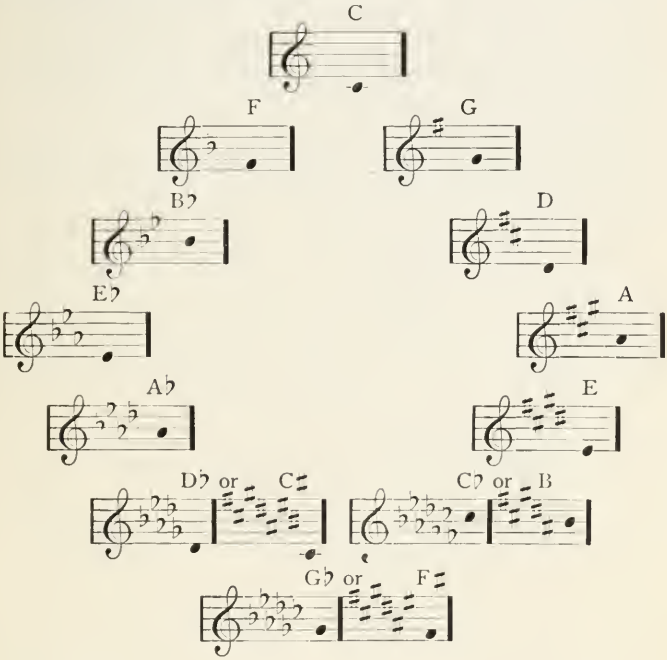
223. The word "enharmonic" used thus is a notational term meaning a change of representation without change of pitch.

224. It is used in another sense, implying a difference of pitch less than a semitone.

225. In Greek music the word "enharmonic" was of generic significance, since the system recognized three orders of intervals and scales: diatonic, chromatic, and enharmonic. For further consideration of these terms consult Grove's Dictionary of Music and Musicians, Riemann's Dictionary and his other works, Macfarren's Six Lectures on Harmony, etc.

The Circle of Keys

226. An arrangement of keys or tonalities in the order of their closest relationship — that is, each key-note being the dominant (over-fifth) or subdominant (fourth or under-fifth) of the one before it (secs. 215, 217, 237).



The circle may be made in either direction from the key of C by making the necessary enharmonic change at one of the three possible points (sec. 222).

227. The minor diatonic scale (sec. 195) has three forms; the first section or lower tetrachord is always based upon the same model:

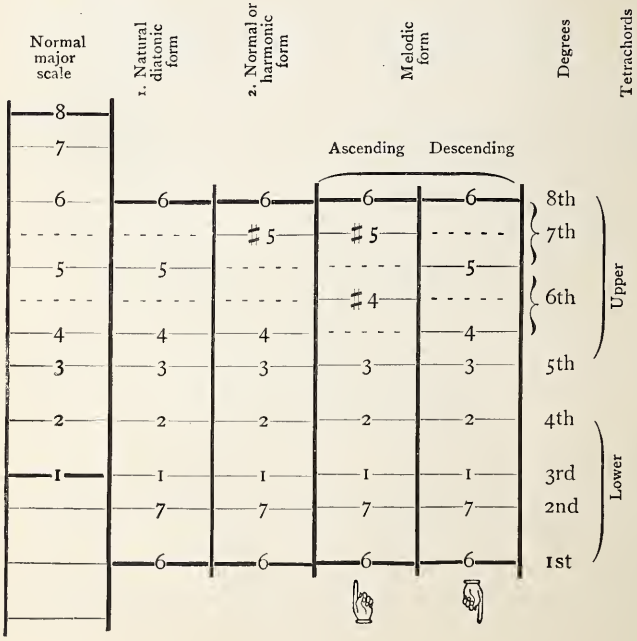
1st degree to 2nd degree — 2nd to 3rd — 3rd to 4th
tone semitone tone
(sec. 230).

The upper tetrachord is the variable part of the scale.

228. The study of the minor keys usually begins with the minor scale based upon the 6th degree of the normal major scale. (See diagram below.)

229. This form of the minor scale is one of the ecclesiastical modes (the Æolian) retained in modern music. (See references, page 92.)

230. The other forms shown in the diagram are representations of other modes all of which are interchangeably used in modern music.



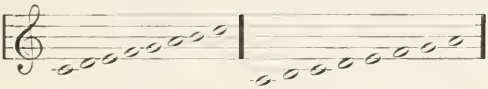
231. The numerical notation of the major scale is retained in the diagrams of the minor scale for the sake of convenient comparison; of course the distinction must be made between the ideas 6 and the 1st degree, although both terms express the same sound in the minor scale. These contradictory terms are due to the common method of deducing the minor scale from its *relative* major scale.

232. By comparing the three forms of the minor scale with the normal major scale it will be seen that several of the sounds in each, in fact, all of the first, are identical.

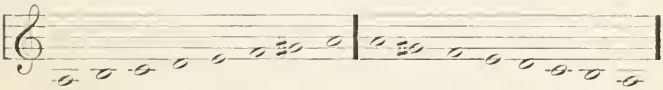
233. For this reason a major scale and the minor scale based upon its 6th degree have always the same signature, or none, as in the keys of C major and A minor; and the two scales, having so many sounds in common, are called **relative major and minor keys.**

234. The tonic or key-note (1st degree) of the relative minor of any major key is always a minor third *below* the tonic of that major; and, conversely, the tonic of the relative major of a minor key is always a minor third *above* the tonic of that minor.

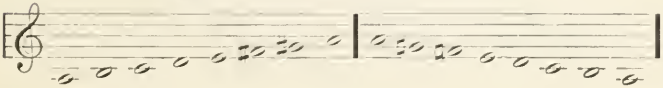
Relative Major Key of A minor. **Relative Minor Key** of C major — Natural form.

C major  A minor

Harmonic form — A minor scale.



Melodic form — A minor scale.



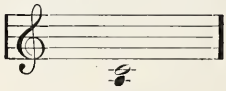
235. In the upper tetrachord of the harmonic form it should be noted that the strict diatonic order is violated. The laws of musical composition sanction this infraction.

TABLE OF KEY SIGNATURES

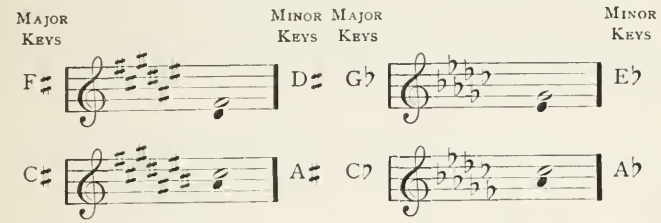
236. The whole-note, 𝅝, indicates the place of the key-note of the major scale.

The quarter-note head indicates the place of the key-note of the minor scale.

C major — A minor.

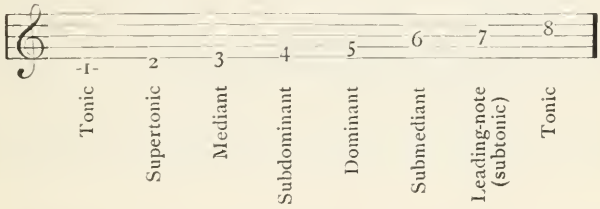


Major Keys		Minor Keys	Major Keys		Minor Keys
G	♯	E	F	♭	D
D	♯♯	B	B♭	♭♭	G
A	♯♯♯	F♯	E♭	♭♭♭	C
E	♯♯♯♯	C♯	A♭	♭♭♭♭	F
B	♯♯♯♯♯	G♯	D♭	♭♭♭♭♭	B♭



237. The degrees of the diatonic scale, major or minor, are known by the following names:

1st degree —	**Tonic**	Most important sound in the scale.
2nd	**Supertonic**	Sound "above the tonic."
3rd	**Mediant**	About "midway" between the tonic and dominant.
4th	**Subdominant**	The lower or under dominant.
5th	**Dominant**	The second most important sound in the scale.
6th	**Submediant***	About "midway" between the tonic and the underdominant.
7th	**Leading-note** or **Subtonic**	So named because of its tendency to ascend; the sound under the tonic

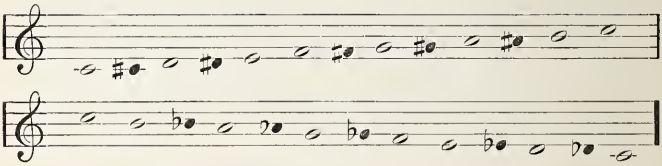


238. There are various ways of representing the chromatic scale. "Its notation differs according to the key in which it occurs and according to the harmony with which it is connected."

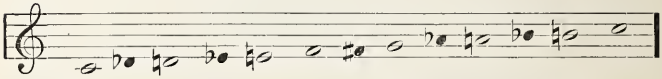
* Also called **superdominant**.

239. The common method is to use sharp signs (♯, ×, ♮), in the ascending scale and flat signs (♭, ♭♭, ♮), in the descending scale (secs. 40–48).

CHROMATIC SCALE IN THE KEY OF C.



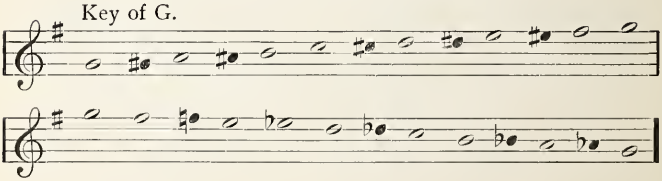
240. Another method is:



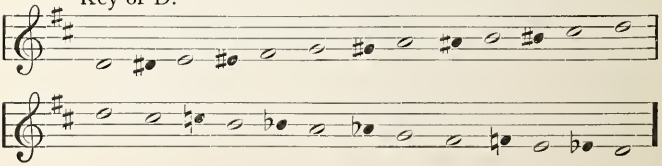
241. Other methods of writing the chromatic scale are based upon different theories regarding the harmonic origin of its intervals. (See Prout, Riemann, and others.)

THE CHROMATIC SCALE

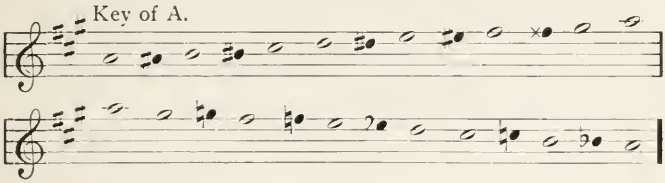
Key of G.



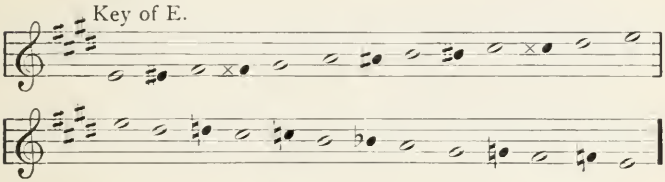
Key of D.



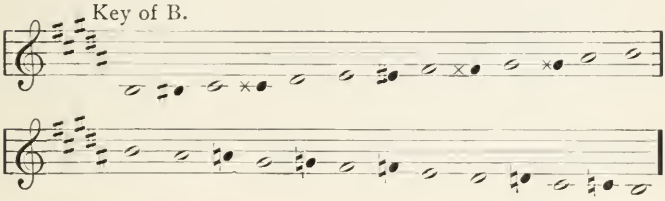
Key of A.



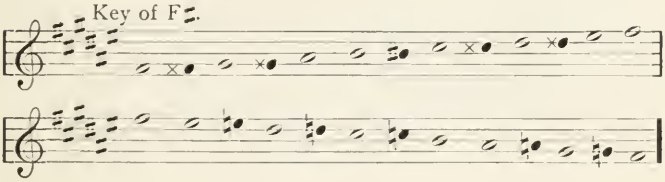
Key of E.



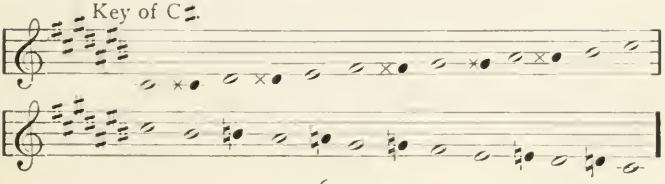
Key of B.



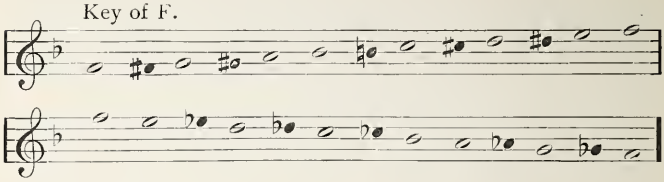
Key of F♯.



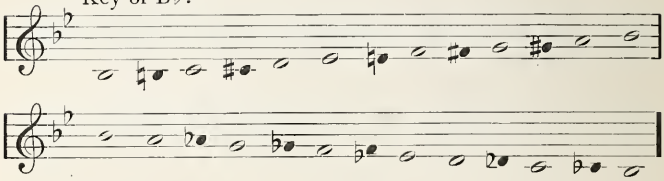
Key of C♯.



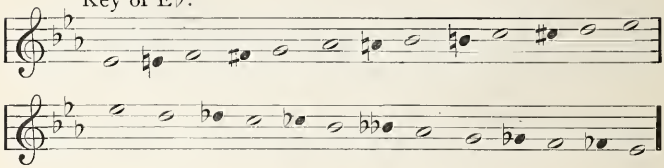
Key of F.



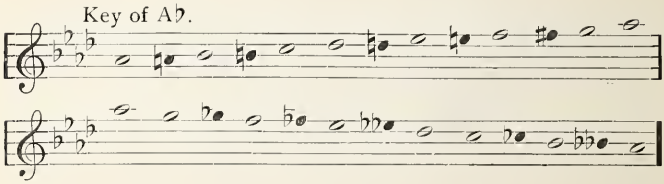
Key of B♭.



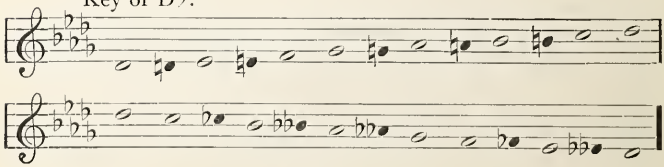
Key of E♭.



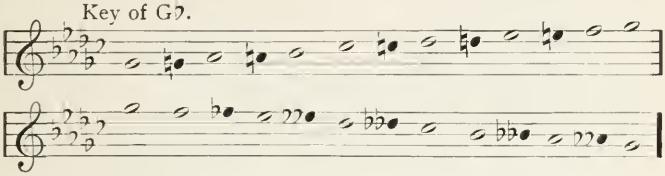
Key of A♭.



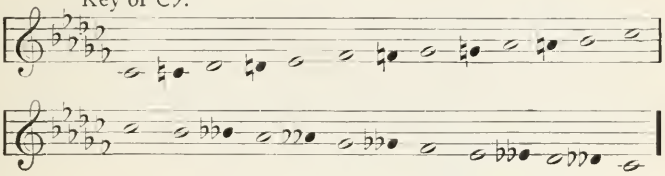
Key of D♭.



Key of G♭.



Key of C♭.

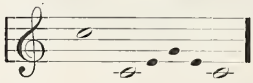


Chapter IX

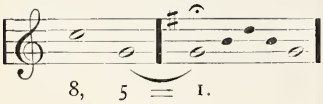
RULES FOR ESTABLISHING KEYS

242. Use a $\overline{\overline{c}}$ tuning-fork or pitch-pipe, international pitch (517).

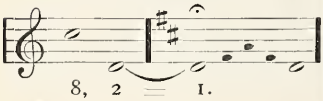
KEY OF C: Think $\overline{\overline{c}}$, 8 or 1.



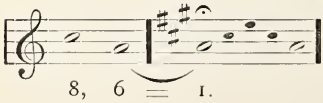
KEY OF G:
Think 5 in the key of C, 1.



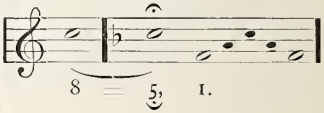
KEY OF D:
Think 2 in the key of C, 1.



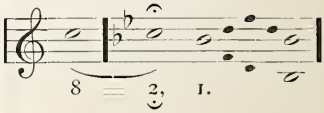
KEY OF A:
Think 6 in the key of C, 1.



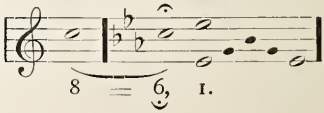
KEY OF F:
Think $\overline{\overline{c}}$, 5, then sing 1.



KEY OF B♭:
Think $\overline{\overline{c}}$, 2, then sing 1.

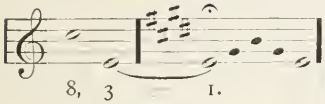


KEY OF E♭:
Think $\overline{\overline{c}}$, 6, then sing 8 or 1.



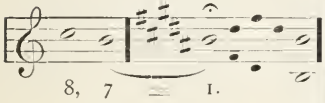
KEY OF E:

Think 3 in the key of C, 1.



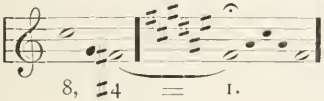
KEY OF B:

Think 7 in the key of C, 1.



KEY OF F♯:

Think ♯4 in the key of C, 1.

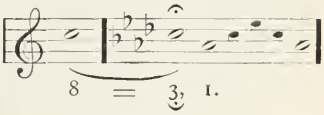


KEY OF C♯:

Think ♯1 in the key of C, 1 or sharp ♯c and think it 1.

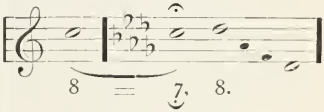
KEY OF A♭:

Think c, 3, then sing 1.



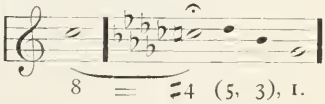
KEY OF D♭:

Think c, 7, then sing 1.



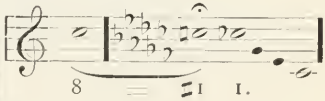
KEY OF G♭:

Think c, ♯4, then sing (5, 3) 1.



KEY OF C♭:

Think c, ♯1, then sing 1 or flat ♭c and think it 1.



243. In major keys with sharps, the key-note, 1, is always the next degree (on the next line or in the next space) above the last sharp of the key-signature.

244. In major keys with flats the last flat is the 4th degree of the scale; the key-note therefore is four degrees below the last flat and in the key of F four degrees below its only flat.

The transposition of the two fundamental scales (C major and A minor) may be recognized and remembered from the following table:

MAJOR KEYS

Flats								Sharps						
7	6	5	4	3	2	1	0	1	2	3	4	5	6	7
C♭	G♭	D♭	A♭	E♭	B♭	F	C	G	D	A	E	B	F♯	C♯
			7	6	5	4	3	2	1	0	1	2	3	4
			Flats								Sharps			

G♯	D♯	A♯												
5	6	7												

MINOR KEYS

[Riemann's Dictionary]

245. The complement of a given key-signature is expressed by the number of *opposite* signs, sharps and flats being considered *opposite*; e. g.:

Possible total, 7 signs.

Given key, 3 sharps;

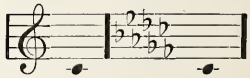
Complementary key, 4 flats.

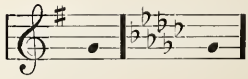
246. Upon examination of the table of key-signatures (sec. 236) it will be found that the location of the key-note of a key, and the key-note of its complementary key, is identical.

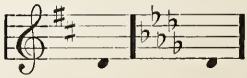
COMPLEMENTARY TABLE

Showing identical positions of key-notes.

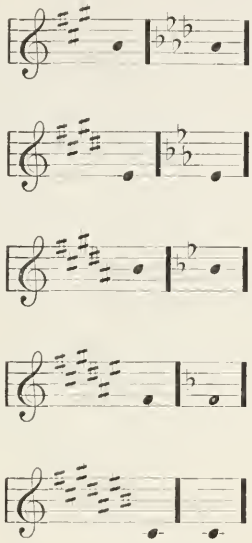
Signature		Signature
0♯	=	7♭
1♯	=	6♭
2♯	=	5♭





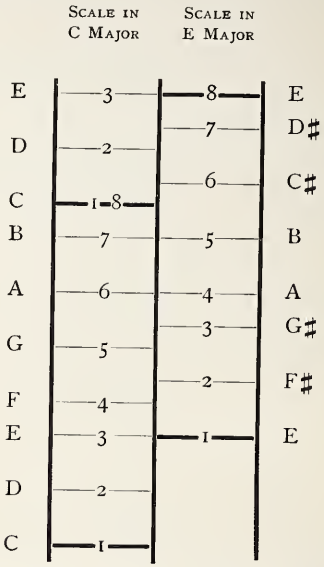


Signature		Signature
3♯	=	4♭
4♯	=	3♭
5♯	=	2♭
6♯	=	1♭
7♯	=	0♭



247. With the aid of comparative diagrams of the major scale, the reason for the signature of any key may be readily explained; e. g., the signature of the key of E, 4 sharps.

By drawing the major scale diagram in juxtaposition to the original C major diagram, the first degree of the former corresponding to the third degree of the latter, four disagreements in pitch will be indicated, thus:



It will be profitable to work out all the signatures of the major keys in this manner.

Chapter X

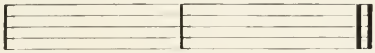
DEFINITIONS

248. A **staff** (sec. 16).

249. **Leger lines** (sec. 28), light lines below or above the staff.

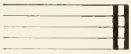
250. A **clef** is a character placed upon a staff to indicate the name and pitch of one of its degrees, so that the names of the others may be known (secs. 31, 32, 33).

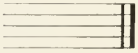
251. **Bars**: a line drawn perpendicularly across the staff is called a **bar**. A **double-bar** is two bars placed together at the end of a movement or strain (secs. 99, 105).



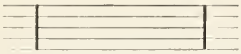
Bar Bar Double-bar

Different kinds of double-bars are used:

a single heavy line, two heavy lines, 

and sometimes one light and one heavy line, 

252. **Measure** (sec. 100).



Measure

253. **Brace** (secs. 53, 54).

254. A **sharp** (♯): a character which *raises* the pitch of a staff-degree (sec. 61) a semitone.

255. A **flat** (♭) : a character which *lowers* the pitch of a staff-degree a semitone.

256. A **double-sharp** (×): a character which raises the pitch of a *sharped* staff-degree a semitone.

257. A **double-flat** (♭♭): a character which lowers the pitch of a *flatted* staff-degree a semitone.

258. A **natural** (♮), a character which restores the original pitch of the staff-degree.

259. **Key-signature** : the number of sharps or flats placed at the beginning of the staff (sec. 220). Also called *signature.*

260. **Time-signature** : two numerals, one above the other placed at the beginning of a piece, after the key-signature (sec. 122).

261. **Double-note** : an open note between short vertical lines.

Double-rest : an upright oblong.

262. **Whole-note** : an open note.

Whole-rest : an oblong *under* a line. Also whole measure rest.

263. **Half-note** : an open note with a stem.

Half-rest : an oblong *over* a line.

264. **Quarter-note** : a closed note with a stem.

Quarter-rest : like the letter *z* reversed. Other signs, , .

265. **Eighth-note** : a closed note with stem and one hook.

Eighth-rest : a stem and one hook (toward the left).

266. **Sixteenth-note** : a closed note with stem and two hooks.

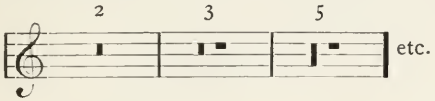
Sixteenth-rest: a stem and two hooks.

267. **Thirty-second-note** : a closed note with stem and three hooks.

Thirty-second-rest : a stem and three hooks.

268. **Sixty-fourth-note**: a closed note with stem and four hooks. **Sixty-fourth-rest**: a stem and four hooks.

269. Specific signs are sometimes used to indicate a rest of two, three, or more measures;



or a number of measures rest may be abbreviated thus:

270. A **pause** (𝄐) (sec. 86).

271. D. C. or **Da Capo** (dä kä′pō) [Italian, "from the beginning"] is the sign used when a movement is to be repeated from the beginning.

272. D. S., the abbreviation for the Italian words, **dal segno** (dȧl sā′nyō), meaning "from the sign," in which case the music is to be repeated from the sign employed, 𝄋, ⊕, etc.

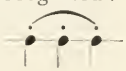
273. 1st. 2d. or *1ma* (*prima*) *volta* (1st time) and *2da* (*secunda*) *volta* (2nd time); signs used for the **first** and **second endings** respectively of a repeated passage.

The measures marked *1st* are to be sung or played once, and in the repetition, the measures marked *2nd* are to be sung or played instead.

274. **Legato** (secs. 135, 311).

275. **Staccato** (stȧk-kä′tō) [Italian, *staccare*, detach]: a dot or point over a note to show that it is to be sung shortly, disconnectedly. Three grades of staccato are sometimes recognized:

(a) *Non-legato*, the slightest, being marked by dots over or under the notes with a sweeping curve.



(b) *Demi-*(or *mezzo-*) *staccato*, dots without the curve.

(c) *Staccato*, the greatest, pointed strokes instead of dots.

276. **Repeat** : dots, called **repetition dots**, placed by the side of a double bar indicating that the passage or movement preceding or following them is to be performed twice.

Sometimes the sign :S: is added for greater distinctness.

277. *Bis* (Latin, "twice") is often used when one or two measures are to be repeated.

278. *Fine* (fē'ne) [Italian, "the end"] signifies the conclusion of a piece : often used in conjunction with D. C. or D. S. ; e. g. *D. C. al Fine*, "from the beginning to the end."

279. **Cue** : (queue) the *tail* or final notes of a preceding passage.

A few notes of some other part printed smaller than those of a particular part to which they serve as a guide for a correct and prompt beginning.

280. **Ornaments** is the usual name for the embellishments of a melody, indicated by smaller notes or by special signs.

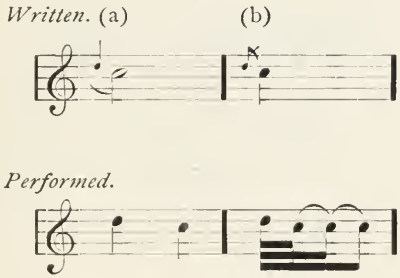
281. Some of the most important and most common in modern music are the **acciacatura**, the **appoggiatura**, the **turn**, the **inverted turn**, and the **shake** or **trill**.

282. **Acciacatura** (ät-chäk-kä-tö'rä) [Italian, *acciacare*, "crushing"]. An obsolete grace-note, in pianoforte or organ music, a semitone below an essential note, struck at the same moment with the essential note and immediately released while the latter is held.

It was indicated thus ♪ (a note with a stroke drawn across the stem and hook). The term **acciacatura** is now applied to the **short appoggiatura**.

283. **Appoggiatura** (ap-poj-ä-tö′rä) [Italian, *appogiare*, to lean upon]. One of the most important and most commonly used melodic ornaments. It is a small additional note preceding a note of the melody, written either above or below the principal note and taking from it a portion of its time.

284. It is of two kinds, *long* and *short*: (*a*) the **long appoggiatura**, which has a definite value (ordinarily its own indicated value) deducted from the value of the principal note which follows it, and (*b*) the **short appoggiatura**, which is sung or played as quickly as possible.

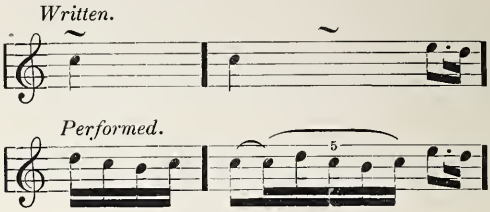


285. The **short appoggiatura** is commonly called **acciacatura** (sec. 280), and the **long appoggiatura**, **appoggiatura** simply.

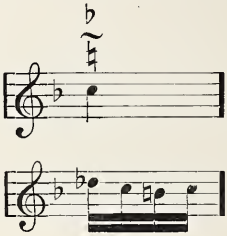
286. The **turn** ∼ is another common ornament or grace consisting of four notes,—the note above the written note, the written note itself, the note below, and the written note again. The additional notes are called **auxiliary** notes.

When the sign is directly over a note, the four notes of the turn are played or sung rapidly or in accordance with the general speed of the melody.

When it is a little to the right of the note, the written note is played first and the notes of the turn follow.



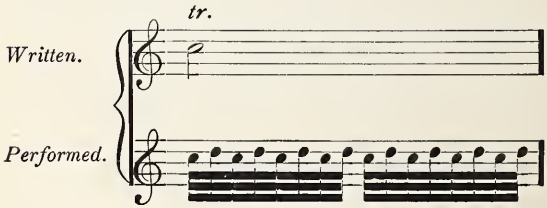
Chromatic alterations are indicated by accidentals above or below the sign.



287. A turn occurring in two parts at once is called a **double-turn** and is indicated thus: ≈ .

288. An **inverted turn** ≀ means that the lower auxiliary note must be performed first.

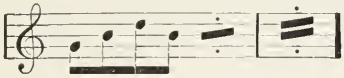
289. The **shake** is the chief ornament of music. It consists of the rapid and regular alternation of a note with a note one degree above it. It is also called a **trill**, indicated by the mark tr., with or without the sign *w* .



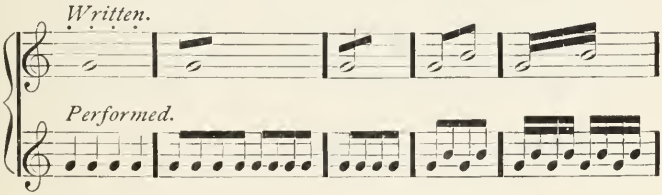
290. **Loco** (Italian, "in its place") annuls a previous 8va (*ottava*, octave) sign (secs. 65, 66).

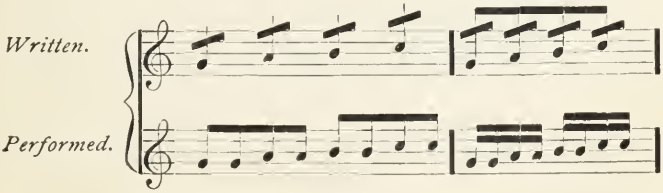
291. The **Octave mark**, *al ottava* or *8va* (Italian, "at the octave"), when placed above the staff, signifies that the notes are to be performed an octave higher than written; when below, an octave lower than written. The continuance of the transposition is indicated by a horizontal dotted line and the end by the word *loco* (sec. 290).

292. or , a **repeat** sign used to avoid the rewriting of a short melodic figure:

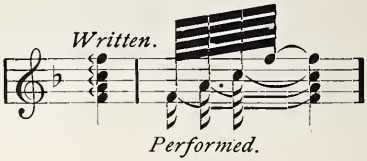


293. **Repetitions of similar sounds** of short duration are indicated by dots and strokes placed over notes of longer duration marked so as to show the species of note into which the latter are to be resolved.





294. **Arpeggio** (ȧr-pej′ō) [Italian, *arpeggiare*, play on the harp] ; the sounding of the notes of a chord * in rapid succession, upward, (rarely downward), as in harp-playing, instead of simultaneously ; its sign is a vertical serrate or wavy line before the chord :



* Chord : the simultaneous sounding of two or more tones (sec. 335).

Chapter XI

EXPRESSION

295. "**Expression** is the method of bringing out or exhibiting the character or meaning of a work in all or any of its details." (Cent. Dict.) Notwithstanding the multitude of signs included in musical notation, they are inadequate (and it must necessarily be so) to define the intention of the composer whereby might be indicated the finer shades of feeling essential to an artistic or *expressive* performance of his work. Only the elements of expression can be considered here.

296. M. M., an abbreviation of **Maelzel's metronome**, a mechanical instrument for marking time. It has a double pendulum or upright slender steel rod weighted at either end and graduated, so that any desired number of oscillations per minute can be secured by moving the upper weight or sliding regulator.

♩ = 60 When the regulator is placed at 60 each oscillation indicates the duration of a quarter-note, — one every second, or 60 quarter-notes in a minute.

Different notes and numbers, 𝅗𝅥 = 100, 𝅘𝅥𝅮 = 80, etc., are found at the beginning of musical compositions defining the exact speed or **tempo** (Italian, time), at which the composer desires that his work shall be performed.

♪ = 60 indicates a *tempo* twice as *slow* as ♩ = 60

𝅗𝅥 = 60 indicates a *tempo* twice as *fast* as ♩ = 60

297. The **standard of duration** is the *tempo* ♩ = 60, and

may be determined by the *seconds pendulum*, a pendulum which makes exactly one oscillation per second. "In the latitude of New York, and at the level of the sea, the length of the seconds pendulum is 39.1 inches nearly." (Cent. Dict.)

298. A **string pendulum** (a string with small weight attached), suspended from a *fixed* point, is a simple contrivance which can be made a very efficient substitute for the metronome above referred to.

299. Gottfried Weber, in his "Musical Composition" (1830), presented a Table of Inches corresponding with the Table of Degrees on Maelzel's Metronome.

300. The comparative table is here presented to aid the teacher in ascertaining the *tempo* of a composition when accompanied by metronomic signs. It must be borne in mind that when such specific indications of movement are present, they are usually intended to assert the *average* rate of speed at which the composition should be taken; for music, in the course of its expression of the emotions and its revelation of the free action of the mind, would at once become spiritless and uninspiring if fettered by arbitrary mathematical distinctions in time-measurement.

There are, of course, forms in music, as the *march*, *waltz*, etc., which demand this exact measurement, and therefore their interpretation is a comparatively simple task; but far more numerous are the compositions which are developments of distinct ideas, whose true perception and expression come to the student only after careful and artistic training. These latter then are the forms whose movement can be but merely *indicated* by metronomic signs, just as it is impossible to describe the style or manner in which a composition should be rendered throughout, by the use of one, or, at most, a few Italian terms at the *beginning*. To illustrate the uncertain nature of metronomic signs, the following extract from "On Conducting" by Wagner may be of interest.

"In my earlier operas I gave detailed directions as to the tempi, and indicated them (as I thought) accurately, by means of the metronome. Subsequently, whenever I had occasion to protest against a particularly absurd tempo, in Tannhäuser, for instance, I was assured that the metronome had been consulted and carefully followed. In my later works I omitted the metronome and merely described the main tempi in general terms, paying, however, particular attention to the various modifications of tempo."

But the importance of the metronome or pendulum as a general indicator is not to be undervalued.

COMPARATIVE TABLE OF MAELZEL'S METRONOME AND WEBER'S PENDULUM

M. M.		Inches	M. M.		Inches	M. M.		Inches
50	=	56	80	=	22	120	=	9½
52	=	52	84	=	20	126	=	8½
54	=	48	88	=	18	132	=	8
56	=	45	92	=	17	138	=	7½
58	=	42	96	=	15	144	=	6½
60	=	39	100	=	14	152	=	6
63	=	35	104	=	13	160	=	5½
66	=	32	108	=	12			
69	=	30	112	=	11			
72	=	27	116	=	10			
76	=	24						

301. Pendulums of equal lengths oscillate in equal times, even if their weights are unlike.

302. In pendulums of unequal lengths, the times in which they oscillate are as the square root of their lengths; and thus the lengths of the pendulums are as the square root of the times in which they oscillate.

303. Therefore, when it is desired that a pendulum oscillate but half as fast as another, it must be four times as long, and on

the other hand only one fourth as long in order to swing twice as fast. Thus we are enabled to ascertain the exact comparative lengths of the sounds represented by the various forms of notes.*

For further consideration of this subject see "Musical Composition," Gottfried Weber, p. 73, "Expression," Mathis Lussy, p. 223, and "On Conducting," Richard Wagner.

304. How to memorize ♩ = 60.

Guided by the second-hand of a watch, count the seconds as follows:

One-thousand *one*, one-thousand *two*, one-thousand *three*, etc.

With a little practice the speed of this rhythm can be readily recalled when the accented syllables *one*, *two*, *three*, etc., will indicate the value of each quarter-note in the standard tempo, ♩ = 60.

From this other tempi may be at least approximated.

305. To discover the rate of speed of a composition during its performance count the number of beats in a quarter of a minute and multiply by four.

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* One of the earliest applications of the doctrine of the pendulum to music was made by William Tans'ur, an English composer and theorist, 1700–1783. In "A Musical Grammar and Dictionary," of which there were several editions between 1746 and 1770 he says (p. 64, ed. 1770): "It is found by Experience, that a *Pendulum*, whose Length from the Point of Suspension to the Centre of the Ball is 39 Inches and 2 tenths of an Inch, Vibrates or Beats Seconds, or 60 times in one minute; and for the certainty and excellency thereof, it is called The Royal Standard; for it is demonstrated, that all Lengths of Pendulums are to one another, as the Squares of the Times of the several Oscillations. . . . Now, to know of what Length I must make a Pendulum, in order to *beat* the true *Time* of the several *Notes* of *Music*; as the *Semi-breve* (𝅝), the *Minim* (𝅗𝅥), the *Crotchet* (♩), etc. . . . Suppose a 30 Inch *Pendulum* should vibrate as the Length of a *Crotchet* (♩), then one of 120 Inches be required to *beat one* Minim (𝅗𝅥); and one of 7 Inches and a half to the Time of one *Quaver* (♪); and 480 Inches to compleat the Time of one *Semi-breve*, etc. Always observing that a *double Length of Time* requires a *Pendulum four Times as long*; and a *half* of *Time*, but *one fourth so long*; this being the true *proportion* by which all *Pendulums* are regulated, etc., etc."

306. We have seen how the *normal* tempo of a piece may be indicated by a metronomic sign.

307. The three principal *tempi* are :

Slow, Moderate, Quick.

308. These, with their intermediate degrees of speed, are generally indicated by words taken from the Italian language. The most commonly used are :

Slow tempo, Grave or Lento, Adagio.
Moderate tempo, Andante, Moderato.
Quick tempo, Allegro, Presto.

309. COMMON TERMS DENOTING RATE OF SPEED :

Adagio (ȧ-dä′jiō), slow ; literally, at leisure.

Allegro (ȧl-lā′grō), quick, lively ; lit., cheerful.

Allegretto (ȧl-lā-gret′to), slower than *allegro;* diminutive of *allegro*.

Andante (ȧn-dȧn′te), slow, graceful, moving at a moderate pace ; lit., walking.

Andantino (ȧn-dȧn-tē′nō) somewhat slower than *andante:* considered oftentimes as quicker than andante, of which it is the diminutive.

Grave (grȧ′ve), very slow, solemn ; lit., heavy, slow.

Largo (lär′gō), slow, broad, and dignified ; lit., large.

Lento (len′tō), lit., slow.

Moderato (mod-e-rä′tō), in moderate pace or tempo ; when qualifying other terms, moderately ; as *allegro moderato*, moderately fast ; lit., restrain.

Presto (pres′tō), fast, in rapid tempo ; lit., quick.

Prestissimo (pres-tis′i-mō), very quickly, superlative of *presto ;* the highest rate of speed in music.

310. Terms modifying the normal tempo:

Accelerando (ät-chā-la-rän′dō), gradual quickening of speed; lit., hasten. Abb., *accel.*

A tempo (ä tem′pō), return to the first rate of speed. An

indication that the original time be resumed after a change in time of a piece.

L'istesso tempo (l'is-tes'sō tem'pō), lit., in the same time; i. e. the speed of the *beats* to remain the same.

Meno (men'ō), less.

Piu mosso (pyeu mos'sō), more motion.

Rallentando (rȧl-lan-tȧn'dō), becoming slower; lit., relent, abate. Abb., *rall.*

Ritardando (rē-tär-dȧn'dō), gradually slower; lit., retard. Abbreviations, *rit.* and *ritard.*

Ritenuto (rē-te-nö'tō), holding back the space; lit., retain.

Stringendo (strin-jen'dō), pressing or hastening the time: usually with a crescendo (sec. 311); lit., compress, compel. Abb., *strin.*

LUSSY'S TABLE OF THE PRINCIPAL TEMPI

WITH THEIR CORRESPONDING NUMBER OF METRONOMIC OSCILLATIONS.

		M. M.
Slow	Grave / Largo or Adagio	40 to 60
	Larghetto	60 to 72
Moderate	Andante	72 to 84
	Andantino / Allegretto	84 to 120
Quick	Allegro	120 to 150
	Presto	150 to 180
	Prestissimo	180 to 208

311. Signs and abbreviations indicating force or intensity of sound:

<< **Cres.**, abbreviation for **crescendo** (kre-shen'dō), gradually increasing the tone; lit., increase.

>> **Decrescendo** (dā-kre-shen'dō), a gradual lessening of the tone; lit., decrease.

>> **Dim.**, abbreviation for **diminuendo** (dē-mē-nö-en'do), lessening the force of sound; lit., diminish.

f, **forte** (fōr'te), loud.

ff, **fortissimo** (for-tis'i-mō), very loud; superlative of *forte*.

fff, as loud as possible.

m, **mezzo** (med'zō), middle, half; lit., middle, medium.

mf, **mezzo-forte**, half loud.

mp, **mezzo-piano**, moderately soft.

p, **piano** (piä'nō), soft.

pp, **pianissimo** (pē-a-nis'i-mō), very soft; the superlative of *piano*.

ppp, as soft as possible.

The three terms (1) **una corda**, one string, (2) **tre corda**, three strings, and (3) **senza sordini** without mutes or **Ped.**, are terms used in pianoforte music signifying respectively, (1) press down the *left* pedal, (2) remove pressure from the *left* pedal, and (3) press down the *right* pedal. The sign * after the abbreviation *Ped.* indicates that the pressure must be discontinued.

312. Other words, abbreviations, and signs relating to the style or character of a composition and indicating the manner of performance are:

Ad libitum (ad lib'i-tum), at pleasure; abbreviated, *ad lib.*

Agitato (ä-jē-tä'tō), restless; lit., agitated.

Alla (äl'lä), after the (manner of); lit., to that.

Animato (ä-nē-mä'tō), animated.

A piacere (ä piä-chā're), at pleasure.

A poco a poco (ä pō'kō, etc.), little by little.

Assai (äs-sä'ī), very; lit., very, much, enough.

Ben, well.

Bouche fermée (French, *boush-ferm-ā'*), lips closed; the music to be hummed.

Brillante (brē-län'te), brilliant.

Calando (ka-lan'dō), with slackening time and gradual decrease of tone; lit., diminishing.

Cantabile (kan-tä'bē-le), in a singing style; to be sung with feeling; lit., singable.

Comodo (kō′mō-dō), easily, quietly, conveniently.
Con (kōn), with.
Con anima (kōn an′ē-mä), with fervor; with spirit.
Con brio (kōn brē′ō), with vigor, spirit, force.
Con espressione (kōn es-pres sē-ō′ne), with expression.
Con fuoco (kōn fuō′kō), with fire, dash.
Con grazia (kōn grä′tsē-ä), with grace; in a flowing style.
Con moto (kōn mō′tō), with spirited movement.
Con tenerezza (kōn ten-er-ret′sä), with tenderness.
Con spirito (kon spir′i-tō), with spirit, energy.
Espressivo (es-pres-sē′vō), expressive.
fp, forte, piano, loud, then soft.
Fieramente (fyā-rä-men′te), with boldness, or fierceness; proudly.
Giocoso (jō-kō′sō), humorous, playful.
Giusto (jös′tō), strict, suitable.
Grazioso (grä-tsē-ō′sō), gracefully, elegantly.
Legato (lā-gä′tō), in an even, smooth, and connected manner; lit., tie.
Leggiero (le-jā′rō), light, easy, swift; lit., lightly.
Ma (mä), but; e. g. *ma non troppo*, not too much so.
Maestoso (mä-es-tō′sō), with dignity, majesty.
Marcato (mär-kä′tō), distinct, emphasized; lit., marked.
Marcia (mär′tshia), march.
Mezzo (med′zō), middle, half, medium.
Molto (mōl′tō), very, much.
Morendo (mō-ren′dō), dying away; lit., die.
Mosso (mos′sō), rapid; lit., move.
Non, not.
Perdendosi (per-den′dō-sē), dying away; lit., losing strength.
Piu (pū), more.
Poco (pō′kō), little.
Portamento (pōr-tä-men′tō), a gliding from one note to another with extreme smoothness; lit., carrying.

Quasi (kwä′zē), like, as if.

Recitativo (rā-chē-ta-te′vō), musical declamation ; recitative.

Rinforzando (rin-fôr-tsan′do), a sudden and momentary emphasis ; lit., reinforcing. Abbreviations, *rinf.* or *rfz.*

Segue (sā′gue), "follows," succeeds ; as *segue il coro,* the chorus follows.

Sempre (sem′pre), "always," throughout.

Sforzato (sfor-tsä′to), with special emphasis ; lit., forced. Abb., *sf.* or *sfz.*

Smorzando (smōr-tzän′do), lit., fading away.

Sostenuto (sos-te-nö′to), sustained ; the notes to be held for their full value ; lit., sustaining.

Spiritoso (spir-i-to′so), lit., spiritedly ; lively, animated.

Sotto voce (sot′tō vo′chā), in an undertone ; lit., under the voice.

Tanto (tän′to), lit., too much.

Tempo giusto (tem′po jös′to), in strict time.

Tempo ordinario (tem-pō ôr-dē-nä′rē-ō), in ordinary time ; as a moderate degree of speed.

Tenuto (te-nö′to), sustained for full value ; lit., held.

Troppo (trop′po), too much.

Tutti (töt′tī), all.

Vivace (vē-vä′che), lit.. lively.

Volti (vōl′ti) turn, *volti subito* (sö′ bē-tō), turn quickly. Abbreviated, *v. s.*

Chapter XII

VOICES AND INSTRUMENTS

313. The **compass of the human voice**, extending from the lowest tones of the adult male to the highest tones produced by children and women, is four octaves or more.

314. Because of the differences in pitch and quality, voices are divided into two classes, — the voices of women and children and the voices of men.

315. These two classes admit of further division: the voices of women and children into soprano and contralto, and the voices of men into tenor and bass. Thus all voices are commonly classified into four divisions:

1. **Soprano or Treble**; high voices of women and children (sec. 27).

2. **Contralto**; low voices of women and children, commonly called *alto* on account of the part in a composition which it usually sustains. In mediæval music, male voices sang the highest part, *altus* (Latin, high), as well as all other parts. When other music developed, requiring still higher voices, the female low voice, that next above the alto, and *counter to* it (contra), was employed. This voice was called the contr'alto.

Tenor; high voices of men (sec. 27).

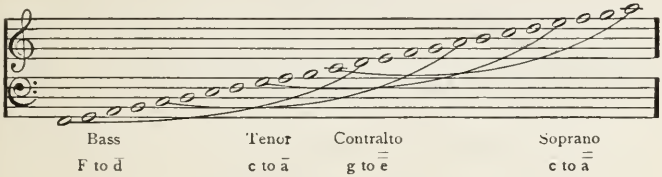
Bass; low voices of men.

316. Other distinctions are:

1. **Mezzo-Soprano**; the name given to the voice (children or women) between the contralto and soprano voice.

2. **Barytone** (Greek, heavy or deep tone); the male voice between the bass and tenor. Notwithstanding its derivation, the term now signifies a high bass quality, not a low tenor.

317. COMPASSES OF THE FOUR PRINCIPAL VOICES



BOOKS FOR REFERENCE:

The Principles of Singing, A. P. Bach.
The Child's Voice, Emil Behnke and Lennox Browne.
Mechanism of the Human Voice, Emil Behnke.
The Boy's Voice, J. S. Curwen.
Speech in Song, A. J. Ellis.
The Child-voice in Singing, Francis E. Howard.
Training of the Child-voice, Francis E. Howard.
Lectures on Voice Production, H. H. Hurlburt.
The Art of Training Boys' Voices, G. C. Martin.
Choral Society Vocalization, J. Stainer.
Practical Hints on Boy Choir Training, G. Edward Stubbs.
Also kindred topics in Grove's and Riemann's dictionaries.

318. Musical instruments included in a modern orchestra may be grouped into three classes, — stringed, wind, and percussive: *

I. Stringed Instruments

(*a*) Instruments played with a bow:
Violin.
Viola.
Violoncello.
Double-bass, Contra-bass, or Bass viol.

* The classification which follows is based upon that given in "The Orchestra" by E. Prout, London, 1897.

(*b*) Instruments the strings of which are plucked:
Harp.
*Guitar.
*Mandolin.

(*c*) Instruments the strings of which are struck by hammers:
*Pianoforte.

II. Wind Instruments

(*a*) Instruments the sound of which is produced by blowing into a hole near the end of the tube:
Flute.
Piccolo.

(*b*) Instruments blown through mouthpieces with a double reed:
Oboe.
*Cor Anglais (English horn).
Bassoon (Fagotto).
*Double Bassoon (Contrafagotto).

(*c*) Instruments blown through mouthpieces with a single reed:
Clarinet.
*Corno di Bassetto (Bassett horn).
*Bass Clarinet.
*Saxophone.

(*d*) Instruments blown through mouthpieces of metal.
Trumpet.
*Cornet-à-piston (Cornet).
Horn.
Trombone.
*Ophicleide.
*Tuba.

* Not as frequently used as the other instruments.

(*e*) Instruments played by the hands and feet on key-boards:
*Organ.
or by the hands only on keyboards,
Harmonium (Reed-organ).

III. Percussion Instruments

(*a*) Instruments played by striking a stretched membrane:
Kettle-Drums (*Timpani*).
*Bass Drum (*Grosse caisse*, big drum).
*Side Drum.
*Tambourine.

(*b*) Instruments of metal; some played by striking them with a rod of steel, some by striking them together and some sounded otherwise.
*Bells.
*Glockenspiel, carillon (chime or set of bells).
*Triangle.
*Cymbals.
*Gong (*Tam-tam* or tom-tom, Hindu, a drum).
*Castanets (made of wood).

SOME WORKS FOR REFERENCE:

Orchestration, H. Berlioz.
The Orchestra, E. Prout.
Catechism of Musical Instruments, H. Riemann.
Handbook of Conducting, C. Schroeder.
Orchestration, R. Hofmann.

319. A **score** is a draft of a musical composition on a series of staffs braced at the beginning and oftentimes barred from the lowest staff to the highest.

* Not as frequently used as the other instruments.

320. A **full** or **orchestral score** (*partitur*) is one in which each voice and instrument usually has its own staff arranged, one above the other, so that all the parts may be read simultaneously.

321. A **vocal, pianoforte,** or **organ score** is one in which each of the voice parts may have its own staff and the accompaniment for the pianoforte or organ is on two or more staffs beneath.

322. The terms *pianoforte score* and *organ score* are, of course, applicable independently of vocal parts.

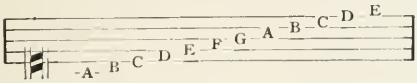
323. A **short, close, condensed,** or **compressed score** is a representation of the parts on two staffs.

Chapter XIII

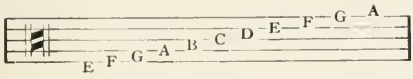
THE C CLEF

324. Frequent use of leger lines for certain voice-parts (which would require such lines if confined to either the treble or bass staff) is avoided oftentimes in full scores by employing the C clef in its various positions (sec. 33).

325. The three positions more frequently used are :

1 

The Soprano Clef.

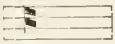
2 

The Alto Clef.

3

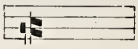
The Tenor Clef.

326. A peculiar form of the C clef is used in Gregorian music or plain-song :



It may be placed on any line.

327. There is another movable clef in Gregorian music, the F clef:



It is usually placed on the 2nd, 3rd, or 4th line.

328. Observe that the staff consists of *four* lines and *three* spaces.

REFERENCES FOR GREGORIAN MUSIC OR PLAIN CHANT.

Magister Choralis, Rev. F. X. Haberl.
Plain Song, Rev. T. Helmore.
Six Lectures on Harmony, G. A. Macfarren.
Evolution of the Art of Music, C. H. Parry.
Catechism of Musical History, H. Riemann.
Articles on Gregorian and Ambrosian Chants, Modes, etc., in Century, Grove's, Riemann's, etc., Dictionaries.

Chapter XIV

SOLMIZATION

329. "**Solmization** is the act, process, or result of using certain syllables to name or represent the tones of the scale, or of a particular series, as the scale of C." (Cent. Dict.)

330. **Aretinian syllables,** so called because said to have been first employed as tone-names by Guido Aretino (Guido d' Arezzo) early in the eleventh century, constitute the most important of all systems of solmization. They were derived from the initial syllables of half-lines of the first stanza of a hymn for the Festival of St. John the Baptist, written by Paul the Deacon, A.D. 774.

They are Ut, Re, Mi, Fa, Sol, La.

Ut queant laxis *Famuli tuorum*
Resonare fibris *Solve polluti*
Mira gestorum *Labiis reatum*
*Sancte Joannes.**

The melody to this hymn was so constructed that each of the first six lines of the stanza began with a different note in regular order, ascending from C to A, six sounds, one of the scales in the hexachord system then in use.

---

* That thy servants may be able with vibrating strings
To make resonant the wonders of thine acts,
Absolve the offence of (each) polluted lip,
O Saint John!

[Rev. T. Helmore].

The syllable *si* for the seventh sound of the modern scale was added later from the initial letters of the closing words, Sancte Iohannes.

The syllable *do* is said to have been substituted for *ut* in the seventeenth century by Bononcini, probably because of its sonorous quality. Its origin is doubtful, but it has been stated that it is derived from Guido's name itself.

(For further consideration of this and other systems, see under solmization, bebization, bobization, etc., in Century, Grove's, Riemann's, etc., Dictionaries.)

331. **Solfaing** (verbal noun of *sol-fa*, verb), same as solmization.

332. **Solfeggio** (sōl-fej'iō) is a musical exercise for the voice, sung either to simple vowels or to arbitrary syllables, and designed to develop the quality, flexibility, and power of the voice as well as the faculty of note-reading.

333. Other syllables have been derived from the Aretinian system and applied to the chromatic sounds within the octave. The entire series, ascending and descending, is:

Ascending	do, di, re, ri, mi, fa, fi, sol, sil, la, li, si, do.	
	1, ♯1, 2, ♯2, 3, 4, ♯4, 5, ♯5, 6, ♯6, 7, 8.	
Descending	do, si, se, la, le, sol, sel, fa, mi, me, re, ra, do.	
	8, 7, ♭7, 6, ♭6, 5, ♭5, 4, 3, ♭3, 2, ♭2, 1.*	

334. For various reasons, other syllables are frequently substituted for some or all of the original Aretinian series.

Consult the Tonic-Sol-Fa publications of J. Curwen & Sons, London; Novello, Ewer & Co., New York, etc. Also articles on Tonic-sol-fa in Century, Grove's, and Riemann's Dictionaries, etc.

* Vowel pronunciation: a = ä, e = ā, i = ē, o = ō.

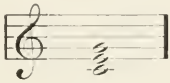
Chapter XV

CHORDS

335. The simultaneous sounding of two or more tones of different pitch is termed a **chord**.*

336. The interval of a *third* is the basis of all chord construction.

337. The combination of a tone with the third and perfect fifth degrees of a scale (major or minor) is called a **common chord** or **triad**.



338. Observe that this chord consists of two thirds within the interval of a fifth, the lower third, from the tonic to the mediant, being a *major* third, and the upper third, from the mediant to the dominant, a *minor* third (sec. 237).

339. Chords are major, minor, augmented, or diminished according to the quality of the intervals (thirds and fifths) of which they are composed (sec. 160).

340. A **major triad** is one in which the lower third is major and the fifth is perfect (lower third, major; upper third, minor). [See example, sec. 337.]

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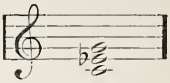
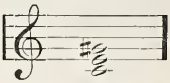
* Many theorists define a chord as a simultaneous sounding of not less than *three* tones of different pitch.

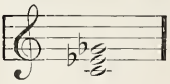
341. A **minor triad** is one in which the lower third is minor and the fifth is perfect (lower third, minor; upper third, major).



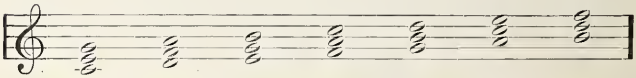
342. An **augmented triad** is one in which the lower third is major and the fifth is augmented (both thirds major).



343. A **diminished triad** is one in which the lower third is minor and the fifth is diminished (both thirds minor).



TRIADS OF THE MAJOR SCALE



344. The chord on the first degree is *major* and is called the **chord of the tonic.**

345. The chord on the second degree is *minor* and is called the **chord of the supertonic.**

346. The chord on the third degree is *minor* and is called the **chord of the mediant.**

347. The chord on the fourth degree is *major* and is called the **chord of the subdominant.**

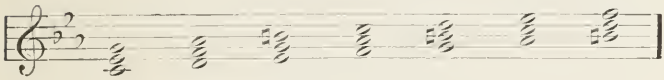
348. The chord on the fifth degree is *major* and is called the **chord of the dominant.**

349. The chord on the sixth degree is *minor* and is called the **chord of the submediant** or **superdominant.**

350. The chord on the seventh degree is *diminished* and is called the **chord on the leading tone.**

TRIADS OF THE MINOR SCALE

(Harmonic form)



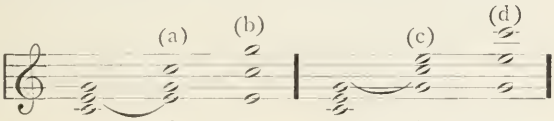
351. (a) The chord of the tonic or tonic chord is *minor*.
(b) The chord of the supertonic is *minor*.
(c) The chord of the mediant is *augmented*.
(d) The chord of the subdominant is *minor*.
(e) The chord of the dominant is *major*.
(f) The chord of the submediant or superdominant is *major*.
(g) The chord on the leading tone is *diminished*.

352. Augmented and diminished triads are not considered common chords.

353. When the tones of a chord are at intervals of a third from one another, as shown above, the lowest tone is called the **root**.

354. The chord is then said to be in its **normal** or **root position**.

355. A chord, like an interval, may be **inverted** by making any other note than its root the lowest note or **bass**.



First inversion. Second inversion.

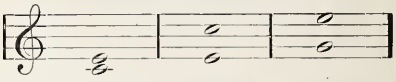
356. When the *third* of the original chord is taken as the bass, as in chords (a) and (b), the chord is called the **first inversion** of the original chord.

357. When the *fifth* of the original chord is taken as the bass, as in chords (c) and (d), the chord is called the **second inversion** of the original chord.

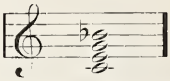
358. When the parts or notes of a chord are as near each other as possible, as in chords (a) and (c), the harmony is said to be in **close position.**

359. When the parts are at a greater distance, *i. e.* when the three highest notes of a chord are not within the limit of an octave, as in chords (b) and (d), the harmony is said to be in **extended** or **open position.**

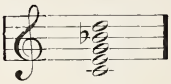
360. When all of the constituent parts of a chord are not present the chord is **incomplete.**



361. If to a triad a third be added (a *seventh* from the root), a **chord of the seventh** is obtained.



362. If to a chord of the seventh another third (a *ninth* from the root) be added, a **chord of the ninth** is obtained.



363. **Chords of the eleventh** and **chords of the thirteenth** may also be constructed.

364. The inversions, derivatives, and chromatic alterations of all the chords named, constitute, according to some theorists, all the chords used in music.

Questions

INTRODUCTION

1. What is sound?
2. How is sound caused?
3. Define the word "tone."
4. What are the mediums of sound?
5. What is a musical sound?
6. Define "noise."
7. What are the three essential characteristics of sound?

8–10. Define each.

11. State a fourth characteristic of sound.

CHAPTER I

12. What is music?
13. How is pitch represented?
14. How is the duration of sounds represented?
15. Which is the first line? The first space?
16. What is the staff?
17. How are the lines named? Name the spaces.
18. What is the "great staff"?
19. How many different sounds can there be? What is the octave?
20. What is the unit of division in sound?
21. What is a scale? What is the real meaning of the word "scale"?
22. How many letters are used in music? Name them. Why are they used?
23. How are the letters named?
24. Write the letter-names of the lines and spaces of the great staff.
25. How is the great staff divided? Why is it divided?
26. Name the lower staff; the upper staff.
27. What gave rise to the name "treble"?
28. What is a leger line? What pitch is represented on the first line below the treble staff? On the first line above the bass staff?
30. What three signs are used to indicate that certain lines of the great staff have definite pitches?

31–33. Write the different clefs off their proper staffs; on

their staffs. State the purpose of each clef.

36. State the possible difference in pitch between a line and a space, or *vice versa*.
37. How is pitch divided within the limits of an octave?
38. What is each division called? What is a semitone?
39. What constitutes the standard and normal scale?
40. What are the five signs employed to change the pitch of a line or space of a staff?
41. What sign raises the pitch of a line or space a semitone? Write the sign.
42. What sign lowers the pitch of a line or space a semitone? Write the sign.
43. What sign is used to sharp a line or space previously affected by a flat? Write the sign.
44. What sign is used to flat a line or space previously affected by a sharp? Write the sign.
45. What sign is used to sharp a line or space previously affected by a sharp? Write the sign.
46. What sign is used to flat a line or space previously affected by a flat? Write the sign.
47. How is the "natural" still further employed?
48. What other name is given to the "natural," and why?
49. When is a sharp said to be permanent? What is it then called?
50. What is a "bar"?
51. How many essential sharps may be placed upon the staff?
52. How far does the modification of essential sharps extend?
53–54. Name two kinds of "braces" used.
55. When is a flat called essential, and what is its effect intended to be?
56. How many essential flats may be used?
57. How far does the modification of essential flats extend?
58. What is an "accidental"?
59. Of what does the normal scale consist?
60. How is absolute pitch expressed?
61. What are "staff-degrees"?
62. Were the first seven letters of the alphabet once used for a scale corresponding to the present normal scale?
65. What sign is used to indicate that sounds are an octave higher than where they are represented on the staff?
66. What sign indicates sounds an octave lower than represented?
67. How are the different octaves designated?

CHAPTER II

69. How is length or duration of sound recorded and represented?
70. Give the number of signs in common use; name them; write them.

71. Name other notes less commonly used.
72. Of how many parts may a note consist? Name them.
73. In which direction is the stem of the note turned?
74. Describe the arrangement of the stems when two series of notes occur upon a staff.
75. When there is but one series of notes on a staff, how are the stems commonly written?
77. Recite the table of notes; describe each note; give its technical name; write it.
78. What is a triplet?
79. How is a triplet represented?
80. Name the forms of grouping notes.
81–86. What signs are used to modify the time-value of a note? Describe and write each sign.
87. How is *silence* expressed?
89. Give the table of rests and equivalent notes. Write out the table. How is the stem of a rest turned? How is the hook turned?
90. How may the duration of a rest be extended?
91. What is the value of a rest followed by two dots?
92. Are three dots used? What is their value?
93. By what other sign may the duration of a rest be extended?

CHAPTER III

95. What is the meaning of the word "rhythm"?
96. What does the term "meter" signify? How is it applied?
97. What is the sign commonly used to express pulses or beats of equal duration?
98. What is the simplest metrical division of beats?
101. To which note in the division is a stress given?
102. What term is applied to the effect of stress or emphasis?
103. Of how many beats may rhythm consist? — Into how many kinds may almost all rhythms be reduced?
105. What is primary accent? What sign marks the place of primary accent?
106. In two-part measure how are the parts or beats designated?
107. How many common kinds of time are there in two-part measure? Name them; describe them.
108. In three-part measure how are the parts designated?
109. How many common kinds of time are there in three-part measure? Name each and describe it.
110. In four-part measure how are the parts designated?
111. How many common kinds of time are there in four-part measure? Name each and describe it.
112. In six-part measure how are the parts designated? What other names are given to six-part measure?

113. How many common kinds of time are there in six-part measure? Name each and describe it.
114. In rapid movement how is six-part measure usually regarded? How is it beaten?
115. In nine-part measure what are the parts? Give its other name.
116. What kind of time is commonly used in this form of measure?
117. How is it beaten in rapid movement?
118. What is twelve-part measure? How is it commonly represented?
119. How is it marked in freer movement?
120. Name some rarer varieties of (compound) rhythm. How are they counted and accented?

CHAPTER IV

122. What sign indicates the rhythm or time of a piece of music?
123. Describe it.
124. Is the time-signature repeated upon the succeeding-staffs for the same voice part?
125. How may the same kind of rhythm be expressed?
126. How may each part of a rhythm be made compound? How may quadruple rhythm be produced? How is the first variety of sextuple rhythm produced?
127. How may the second variety of sextuple rhythm be derived? In what form is this variety used? What is the accentual difference between the sextuplet and the double-triplet?
128. How is nonuple rhythm derived?
129. How is dodecuple rhythm or twelve-part measure derived?

[Table] Write a measure in each kind of time following the order of rhythmical development.

130. How are the signs C and ₵ (barred C) frequently used?
131. Explain the meaning of C. What is it derivation?
132. Explain ₵, (the barred C). What is the meaning of *A* (or *Alla*) *capella?*

CHAPTER V

133. What is syncopation?
134. How may syncopation be more strongly marked?
135. What is a slur? How is a slur distinguished from a tie? What is a *legato?* By what other name is it known? What is its opposite effect?
136. What are the usual principal movements in conducting?
137. How is duple measure marked?

Questions

CHAPTER VI

138. How is triple measure marked?
139. How is quadruple measure, marked?
140. In slow movement how is sextuple measure marked? In rapid movement? (Sec. 114.)
141. How is nine-part measure slow time, marked? How is a quick tempo in nonuple rhythm beaten? (Sec. 117.)
142. How is twelve-part measure marked?

CHAPTER VII

143. What is an interval?
144. What is a harmonic interval? What is a melodic interval?
145. How are intervals reckoned?
146. What is the standard of measurement of intervals?
147. What is a diatonic interval?
148. Explain the meaning of the word "diatonic"
149. What is a chromatic semitone?
150. Explain the meaning of the word "chromatic"?
151. How may intervals be calculated? What does the term "prime" signify? What is a second?
152, 153. How many seconds does the normal scale comprise? How many are minor? How many are major? Explain the terms "major" and "minor."
154. Name some thirds.
155. State the different kinds of thirds in the normal scale and the number of each kind.
156. Construct fourths, fifths, etc., on each degree of the scale and note their differences in quality (extent).
157. What intervals are the standards for comparison?
158. Name the standard intervals from C; from D; from F; etc.
159. What are simple intervals? What are compound intervals?
160. How many names are used to describe all possible intervals? What are they?
161–163. Is prime an interval? Name all the intervals in the normal scale based upon its tonic?
164. What is a minor interval?
165. How may a major interval be changed to minor? By what sign is the change effected? Give some written examples.
166. How may minor intervals be changed to major? Give written examples.
167. How are augmented intervals formed?
168. What is a diminished interval?
169–170. How may an interval be inverted? Give examples.
171. Give the rule for determining

the number of the inversion of an interval.

172. State the effect of inversion upon the five kinds of intervals.

173. Is the quality of perfect intervals changed by inversion? Give a reason for the use of the word "perfect."

174. What is an interval in its usual position sometimes called?

175. How many classes of intervals are there? Name them.

176. What is a consonance? By what other term is a consonance known?

177. How many kinds of consonances are there? Name them.

178–179. What are the intervals comprised in each kind?

180. What is a dissonance? What other term is applied to a dissonance?

181. Name the dissonances.

182. What is a resolution?

183. What is a diatonic interval?

184. What is a chromatic interval?

185. What is an enharmonic interval?

(Page 42). Recite the table of diatonic intervals between C and its double octave (above).*

(Page 44). Using the table of intervals on this page as a guide, write other tables on the pitches D, F, C♯, G♭, etc.

186. Upon what is the computation of all intervals based?

187. To what other theory does the theory of intervals lead?

CHAPTER VIII

188. State what constitutes a scale in its general sense.

189. In the modern system of music how many kinds of scales are there? Name them.

190. What is a degree?

191. What is a diatonic scale?

192. What is a chromatic scale?

193. How many diatonic forms of the scale are used in modern music? Give their names and reason for the names.

194. What is a major scale?

195. What is a minor scale? †

196. How may we obtain a scale having seven sharps?

197. What follows from the fact that there is a scale having seven sharps?

198. What is expressed by the word "key"? What other term has the same meaning?

199. What is a key-note?

200. What does "key" further signify? What determines the "key-name" of a composition?

201. What is transposition?

* Which interval is also called the tritone? Why?

† What are tonic major and minor scales? What is the tonic minor of the G major scale?

203. How may a scale having seven flats be obtained?
204. Into how many flat keys may the major scale be transposed?
205. What is the total number of major keys?
206. How many minor keys are there?
207. How many keys does our modern system comprise?
208. Into how many parts is the fundamental major scale divisible?
209. What is a tetrachord? What is its literal meaning?
210. Describe the arrangement of the two tetrachords in the major scale.
211. What is the tone which separates the two tetrachords called?
212. How is the first transposition of the major scale effected?
213. What must be done in order that the transposed scale shall agree perfectly with the model scale of C major? Illustrate by a diagram. Represent upon the staff.
214. How far is the transposing process continued with sharp keys?
215. Upon which degree is each succeeding scale erected? Write the successive sharp scales upon the staff in whole notes indicating each sharped note by its proper sign preceding.
216. What conclusion may be formed regarding the fundamental major scale?
217–218. How is the series of flat keys obtained? Write the successive flat scales upon the staff indicating each flatted note by its proper sign preceding.
220. How are the sharps or flats necessary to a key placed upon the staff? What are they then called?
221. Write in their order the key-signatures and key-notes of all the major keys on the treble staff; on the bass staff.
223. What is the meaning of "enharmonic"?
224. What else does the term imply?
225. What three orders of intervals were recognized in Greek music?
226. What is the circle of keys? Write it.
227. How many forms has the minor diatonic scale? Which is the variable part of this scale?
228. With which minor scale does the study of minor keys begin?
229. What is its name in the system of ecclesiastical modes?
230. Name the forms of the minor scale.
231. Why is the numerical notation of the major scale retained in considering the minor scale? What distinction should be made?
232–233. What is the meaning of relative major and minor keys? Why do a major key and its relative minor have the same signature?
234. Where is the key-note of a relative minor of a major

key found? Write the different forms of the diatonic scale in A minor; in C minor; etc.

235. What should be noted about the upper tetrachord of the harmonic form?

237. Name the degrees of the diatonic scale, major or minor.

239. How is a chromatic scale commonly written? Write the chromatic scale, ascending and descending, in every key.

CHAPTER IX

242. Give the rules for establishing all the major keys.

243. In sharp major keys where is 1, the key-note of each, located on the staff?

244. In flat major keys where is 1, the key-note of each, located?

245. How is the complement of a given key-signature expressed? Give an example.

246. What are the positions of the key-note of a key and the key-note of its complementary key?
Write the table of complementary keys.

247. Show by diagrams the derivation of the signature of every key.

CHAPTER X

[Write the characters enumerated below.]

248. What is a staff?
249. What are leger lines?
250. What is a clef?
251. What is a bar? What is a double bar?
252. What is a measure?
253. What is a brace?
254. What is a sharp?
255. What is a flat?
256. What is a double-sharp?
257. What is a double-flat?
258. What is a natural?
259. What is a key-signature?
260. What is a time-signature?
261. What is a double-note? What is a double-rest?
262. What is a whole-note? What is a whole-rest?
263. What is a half-note? What is a half-rest?
264. What is a quarter-note? What is a quarter-rest?
265. What is an eighth-note? What is an eighth-rest?
266. What is a sixteenth-note? What is a sixteenth-rest?
267. What is a thirty-second note? What is a thirty-second-rest?
268. What is a sixty-fourth-note? What is a sixty-fourth-rest?
269. Describe specific signs used to indicate a rest of two, three, or more measures? How may a number of measures' rest be abbreviated?

270. What is a pause?
271–273. What signs are used to indicate that certain portions of the music are to be repeated?
274. Explain the term *legato?*
275. What does *staccato* mean? Name the three grades of *staccato.* Write an example of each kind.
276. What is the repeat? What sign is added for greater distinctness?
277. What does *bis* mean?
278. What does *fine* mean?
279. What is a "cue"?
280. What are ornaments?
281. Name some of the most important and most common ornaments in modern music.
282 What does *acciacatura* mean? Explain the character. Write an example.
283. What is an *appoggiatura?*
284. How many kinds of *appoggiaturas* are there? Write examples.
285. What are the different kinds of *appoggiatura* commonly called?
286. What is a turn?
287. What is a double-turn?
288. What is an inverted turn? Write examples of the various turns.
289. What is a shake? What is a shake also called? Write an example.
290. Explain the sign "*loco.*"
291. Explain 8va.
292–293. What characters are used to avoid rewriting music?
294. Explain the meaning of *arpeggio.**

CHAPTER XI

295. What is expression?
296. What does M.M. signify?
297. What is the sign for the *tempo* of the standard of duration? How may it be determined? What is the length of a seconds pendulum?
298. What is a string pendulum?
301. How do pendulums of equal lengths oscillate?
302. Give the rule regarding pendulums of unequal lengths.
303. How long must a pendulum be to oscillate twice as fast as another?
304. How may the tempo ♩ = 60 (a quarter-note equals sixty) be memor zed?
305. How can the rate of speed of a composition be determined during performance?
307. What are the three principal *tempi?*
308. How are they generally indicated? Give the words most commonly used.

* What is a chord?

CHAPTER XII

313. What is the compass of the human voice?
314. What are the chief differences between the kinds of voice?
315. Into how many classes are the differences ultimately classified? Name them. What is a soprano or treble voice? What is a contralto voice? What is a tenor voice? What is a bass voice?
316. Give some other distinctions and explain them.
318. Into how many classes may the instruments of a modern orchestra be grouped? Name them.
319. What is a score?
320. What is a full or orchestral score?
321. What is a vocal, pianoforte, or organ score?
323. What is a short score? What other names are given to this kind of score?

CHAPTER XIII

324. How is frequent use of leger lines oftentimes avoided in full scores?
325. What are the three positions of the C clef most commonly used? When the soprano clef is used, what are the letter-names of the lines and spaces? When the alto clef is used, what are the letter-names of the lines and spaces? Name the lines and spaces of the tenor staff?
326. Write the C clef used in Gregorian music. Where is it placed?
327. What other movable clef is used in Gregorian music? Where is it usually placed?
328. Describe the Gregorian music staff.

CHAPTER XIV

329. What is solmization?
330. What are the Aretinian syllables? What is their origin?
331. What is solfaing?
332. What is a solfeggio?
333. Give the syllables for the chromatic scale ascending and descending.

CHAPTER XV

335. What is a chord?

336. What interval is the basis of all chord construction?

337. What is a common chord or triad?

339. Name the different kinds of chords according to their quality.

340–343. Define a major triad; a minor triad; an augmented triad; a diminished triad.

344–350. Give the technical names of the triads in the major scale in succession.

351. State the quality of the triads in the minor scale in succession.

353–354. What is the root of a chord? When is a chord in its root position?

355. How may a chord be inverted?

356–357. What is meant by the first inversion of a chord? The second inversion?

358. When is a chord in close position?

359. What is extended or open position?

360. What is an incomplete chord?

361–363. What is a chord of the seventh? a chord of the ninth? a chord of the eleventh? a chord of the thirteenth?

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